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Original Articles

GALLSTONES AND GALL-BLADDER DISEASES FROM THE STANDPOINT OF THE PHYSICIAN.

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These diseases are common, and they usually come first to the knowledge of the physician. He first prescribes for them and sometimes studies them; frequently he makes a diagnosis.

Whether or not he appreciates their character, he has for them a large measure of responsibility which he can not escape. If he believes a given case has become a subject for surgery, he is responsible to the patient that the consultant shall be capable, that he has the skill in surgical technic to do successfully the several steps of an operation; and, far more important, that he has the knowledge of pathology that fits one to deal with unexpected surgical conditions. The physician may recall cases in which a surgeon has found such conditions and, never having considered their possibility, has blundered in a nonchalant sort of way, to the harm of the patient and the regret of all concerned.

Then occasionally the physician finds the surgeon timid and unwilling to do an operation which, the former thinks, is demanded. This is not a fanciful picture, but actually occurs, and it is a very grave, as well as an embarrassing situation. Equally with the surgeon, even more than he, the physician is responsible both for the diagnosis and treatment of these cases. He can not hide behind his ignorance of their pathology and surgery by pleading that the surgeon knows about them better than he. Such a plea deserves opprobrium.

Further, the physician can often present the urgency of an operation to the patient better than the surgeon. Most people dread operations, and many suspect the surgeons of having undue enjoyment in operating and of being biased by visions of money. For these reasons the physician is a more acceptable counselor; but even he, in these days, is not free from the suspicion of seeking a part of the surgeon's fee.

SYMPTOMATOLOGY.

Every case must have initial medical consideration, as every one requires medical treatment, whether or not it ever comes to operation. Although the symptomatology is now fairly well understood, conditions arise now and then that are decidedly puzzling.

No doubt the chief beginning symptoms of gall-tract trouble have for long been attributed to the stomach. Gastralgia was formerly a very common disorder; now it is properly passing as a frequent pathologic entity. Most cases of pain in the bile tracts are still called gastralgia by a majority of medical men. It is only the sudden, awful colic in the right epigastric region (usually so intense as to require morphin) that is yet widely regarded as true hepatic colic, but the attacks of milder pain occurring periodically are nearly as certain to be in the hepatic structures.

It is substantially true that colic is always the result of muscular spasm, and in the bile tracts it is generally due to the grasp of a stone, the colic ceasing when the spasm relaxes, and the stone perhaps falls back or forward into a larger cavity. Stones not in the grasp of contracting fibers rarely, if ever, cause true colic. Pains from the ulceration of stones are usually long continued and rarely attended with spasm, while they are often attended with fever and other evidences of sepsis.

But colic may be due to spasm of other muscles besides those in the gall tracts, and we are in danger of going too far in the current generalization, for we must remember that there are gastric pains from ulcer, irritation by stomach contents, and even from distension. These may cause pains closely simulating the hepatic colic. The following case is illustrative:

CASE 1.—A girl, aged 25, was seized with sudden intense epigastric pain, closely resembling gallstone spasm. It fluctuated, was worse and better every few minutes. She had been treated for stomach trouble and had lived on a restricted diet for some time. She had eaten a rather hearty meal three hours before, the pains having begun two hours after the meal. The stomach was found globular, and distinctly palpable at the moment of severest pain, less so as the suffering grew less. The pulse and temperature were normal. An attempt to pass the stomach tube led to prompt vomiting of a large quantity of undigested food, consisting mostly of prunes. The pain ceased immediately and did not return for two months, during which time the patient was under observation.

This was undoubtedly a pure case of gastric pain, due to spasmodic contractions of the stomach in its effort to evacuate its irritating contents through a spasmodically closed pylorus. Yet, in the absence of palpation, it strongly simulated the common gallstone colic.

But a similar experience of relief of epigastric pain from evacuation of the stomach contents obtains in true hepatic colic, and a lull in the suffering is, therefore, no proof of the disappearance of the whole cause of the pain. The causation of hepatic colic by overloading the stomach or by sudden indigestion is so common that prompt evacuation of the stomach is usually in order. The following case is in point:

CASE 2.—Mrs. B., aged 50, had for 4 days occasional slight discomfort in the epigastric region. It had once or twice awakened her at night and kept her awake for half an hour. Then severe pain came on with little or no tenderness and no fever. The pain fluctuated but little. Zinc sulphate, 20 grains, promptly brought up a lot of spinach and liquids, with marked although not complete, relief. Then a dose of morphin gave absolute relief, which continued three days. No fever followed, and after a restricted diet for two days she began to eat more freely, when pain of a severe, although not a terrible character, came on, which was nearly continuous for a day,

when she vomited a large amount of macerated asparagus tips with prompt relief of pain. But the pain soon returned, lasting another day, when it suddenly ceased. A single small gallstone was found in the stools a day after the subsidence of the pain. During this last attack there appeared slight but distinct tenderness over the gall bladder and a little jaundice the last day or two. Temperature was 101 at times. There was a slight leucocytosis (8,000 whites) at the height of the pain.

Pains below the scapula (right most often) and about the sternum probably do result from irritation of the bile ducts due to stones and otherwise, but, to my mind, they are unreliable as a guiding symptom; at best they corroborate other and more positive indications of biliary trouble. Many a physician has been led by ordinary chest-wall neuralgias, when unsupported by other evidence, to a false diagnosis of hepatic disease. Probably, too, some have ignored these pains when they have been reflex and due to gall-tract trouble.

After the pain, the most important symptom is tenderness over the gall bladder, found best by deep steady pressure, while the respirations move the organ against the fingers, and by sharp percussion over this region at the moment of full inspiration. Then come chills and fever, perhaps very irregularly, and leucocytosis, with possible jaundice, although this last is never proof of infection. Palpability of the gall bladder and enlargement of the liver may be urgent evidence, and local peritonitis is most urgent of all. The evident peril of the patient depends on the degree of these signs and symptoms; that is, the general evidence of infection from the hepatic region. The hidden peril depends on the uncertainty as to exactly what may be going on behind the wall of the abdomen. Pain is not *per se* evidence of peril, infection is, and this often comes indirectly from the thing that provokes the pain. As to some of these perils we may profitably review our past experiences for instructive, as well as surprising, lessons, particularly our work during the years when we were not thinking of the gall bladder as a large factor in the pathology of the abdomen.

There is certainly one class of gall-bladder affections that has been almost universally misunderstood. Such are certain chronic ones, with profound chills and fever, occurring in an irregular, erratic manner, extending over years of time, often with long intervals of quiescence and with almost no local or focal signs. The following remarkable case[1] illustrates what is meant:

CASE 3.—Mr. C., widower, aged 77, well preserved and plump, had lived a regular and moderate life of office business. For fifteen years he had had an occasional sudden attack of chill and high fever. A profound chill would be followed by high temperature for a few hours; then a profuse perspiration. The next day he would feel well and might so continue for six months before another attack. Sometimes he thought the attacks were provoked by slight indiscretions in diet; he was never guilty of a great indiscretion. They grew more frequent with the years.

Course of Disease.—During the winter of 1900-1901, while sojourning in California, these attacks had become rather frequent, coming as often as once a week, then two or three times a week. In some of them he was slightly delirious. An attack lasted about 6 hours and the temperature often reached 104. He now began to feel greatly prostrated for some hours after an attack. The chill would come without any regularity as to time, although it came oftener in the afternoon or evening. There was no pain or tenderness, that he was conscious of, in any part of the body, either during the attacks or between them. The intervals were without fever.

He lost 20 to 30 pounds in weight within 6 months and was growing progressively weak. There was very trifling tenderness beneath the right costal arch, elicited by deep pressure and manipulation, and no other sign of disease. Digestion was fair, bowels were regular, or a trifle constipated, and the urine contained a few hyaline casts, but no albumin, and the solid output was nearly up to the normal. The blood showed no malarial organisms during an attack and there was slight leucocytosis (8,500 whites).

Operation.—Operation revealed a gall bladder contracted to the size of the end of a small finger and, of course, situated deep in the abdomen. Its walls were very thick and the gall-bladder site of the liver was covered with considerable fibrous tissue, evidently the result of chronic inflammation. The viscus itself was found filled with a mucoid material, without a stone. A drainage tube was fastened at the opening of the gall bladder and kept there for several weeks, when it was forced out by the healing of the sinus from the bottom.

The first week after the operations there were two slight chills, followed by a temperature of 101, lasting but a short time. Thereafter, and up to last report, which was April, 1906, no symptoms of his old trouble have appeared. The operation seems to have effected a complete cure. Unfortunately, it was not possible to make a bacteriologic culture from the contents of the gall bladder.

Another case had a similarly contracted gall bladder, without chills and fever, but with years of frequent sharp attacks of diarrhea:

CASE 4.—Miss M., aged 26, gave a history of several severe paroxysms of epigastric colic, some 5 or 6 years before. They were without known fever or jaundice, and left no symptoms the patient was conscious of. Later she had periodic attacks of diarrhea that was substantially rebellious to all treatment. This trouble lasted three years or more. Then developed suddenly a localized peritonitis about the gall bladder, with fever and great tenderness. Under medical treatment the acute symptoms subsided, but there was deep tenderness and slight fever remaining a month later, when the case was operated on by Dr. Murphy. A gall bladder, much contracted, thickened and retracted, was found full of pus, and without a stone. It was drained; and it recovered with a complete subsidence of the attacks of diarrhea.

In this case, like the previous one, there was fibrosis about the gall bladder and about its usual place against the liver, showing chronic inflammation to have existed for a long time. In this case diarrhea was as mysterious as the chills and fever in the previous one. Both were clearly produced by gall-bladder disease.

That such cases as these must come to be better studied and given surgical relief earlier goes without saying, and the responsibility lies almost solely with the physician. They constitute his opportunity and his duty. Such cases are numerous in every community, and every physician of large experience has the dubious pleasure of recalling instances of temporizing neglect or complete failure to appreciate what, in the light of present-day knowledge, were very evident gall-bladder cases that projected themselves before him with proof that now seems as plain as day. But he was blind and deaf.

I must mention another case that vividly illustrates the long continuance of gall-bladder symptoms without recognition:

CASE 5.—Mr. A., aged about 54, had had for about a dozen years, occasional seizures of intense epigastric pain, lasting one to six hours, and often ending in vomiting. Morphin injections were often required. The attacks nearly always followed a hearty meal of rather indigestible food. Many times the pain was distinctly to the right of the mesial line. Sometimes there was tenderness for some days after an attack. Only once or twice had there been jaundice and then only for a brief time.

1. This case has already been partially reported by Dr. J. B. Murphy who preformed the operation.

I saw the patient, in consultation with a friend (to whom the case was also new), a day after an attack began. Then a localized peritonitis about and below the gall bladder was demonstrable. Fever, tenderness, and constant pain were present, with rapid, weak pulse, and general evidence of desperate sickness. There was no jaundice. It was supposable that a rupture of the gall bladder (or of the stomach at the site of an ulcer), had occurred to produce the peritonitis. The situation precluded the possibility of even an effort at surgical relief and the man died the next day. The postmortem showed a normal stomach, a large gall bladder, partially collapsed, a half inch of its fundus being folded over on itself, and a plastic peritonitis over a space about and below it of 6 by 8 inches. This region was slightly bile-stained near the gall bladder. The gall bladder had evidently leaked from distension, but no gross rupture was discoverable. The contents consisted of mucoid material and a little bile. The cystic duct was not patulous. There can be no doubt that for many days before this attack, the enlarged gall bladder and the urgent need of surgery could have been easily discovered by the most casual examination.

The true significance of enlarged or distended gall bladder is often missed, especially in the presence of jaundice. Long-continued jaundice with large gall bladder rarely means stone, while such jaundice with no distension of the gall bladder means stone with probably more than 80 per cent. of certainty. Long-continued jaundice with distended gall bladder signifies, with a very large percentage of certainty, some tumor obstructing the common duct. Such tumor may be in the pancreas, liver or intestine, and is likely to be malignant. With the distension of gall bladder may come also considerable enlargement of the liver as a whole, without pain or tenderness and without irregularity of its surface such as is often present in carcinoma.

SURGICAL TREATMENT.

Whether operation ought to be done in all cases of proven gallstones or of suppuration or distension of the gall bladder is the same question over again of the misfortunes of the appendix. Patients recover or become quiescent, remain so for years (even with gallstones), and die of other diseases or of old age. Hence one camp of doctors contends that in all such cases we should not operate until forced to by the most exigent conditions. The other camp says that, for the sake of safety, operating should always be done and usually done promptly, since the next attack might be fatal. Both are in part right; neither can prove the other wholly wrong. The unknowable elements of the subject, which are of the nature of a game of chance, that permit so many patients to wait and never come to great harm and that tempt doubters to say, as to some patients operated on, that possibly they might have recovered or become quiescent without operation if they had waited; and that send so many waiting patients to death in surprising ways, who apparently might have been saved by timely and proper operations; these uncertainties put off, and will continue to put off, the day of final, complete agreement among the profession about this class of cases.

One of the elements referred to is the utter impossibility of ever knowing the exact pathologic state until the body is opened; another is the indeterminate measure of the physiologic resisting power of the particular patient until after he is dead.

The fact is that, with gall-bladder infection proved, whoever waits for an operation takes some risk of his life, for he can not know that a hidden avenue of fatal infection is not being formed. It is the right of any responsible person to take that risk if he likes, whatever the hazard may be; and in some cases the hazard does not seem to be much. Certainly the mere presence of stones without infection is not dangerous *per se;* it is the uncertainty as to when the stones may start an infection that constitutes the menace. But a sudden profound chill followed by high fever of short duration, and then by profuse perspiration, are not necessarily proof of an infection that puts life in imminent peril, unless there are also the local signs of a severe character, such as great tenderness, pain and swelling. Case 3 is proof of this proposition.

People are taking great personal risks in manifold ways all their lives and with the lightest thought. But if one suffering from cholelithiasis, to the extent of producing marked symptoms, would minimize to the lowest point his danger of death from it, he probably will have it dealt with surgically; always provided he has a surgeon who is wise in pathology and procedure, as well as expert in technic, and provided he, the patient, has good vital organs. That general statement is still true of the diseased appendix; it is true of gallstones and gall-bladder infection as well.

All cases of chronic cholelithiasis in which the suffering has led to the opium habit should be operated on. Every case of known distension of the gall bladder by fluid of any sort is in constant peril and should be operated on if possible. If there is reason to believe that the bladder contains pus, operation is urgently demanded. And in all cases in which frequent recurrences or the persistence of symptoms indicate the progressive contraction and fibrosis of the gall bladder operation should be insisted on, for in these there is some danger of an explosion of infection that may destroy life and a certainty of the disease getting worse and not better. An operation in the absence of urgent infection (after an attack is over, the so-called "interval"), supposing good vital organs and a good surgeon, is almost devoid of danger; a small fraction of 1 per cent. of mortality.

MEDICAL TREATMENT.

All cases of proven gallstone or gall-bladder trouble are proper subjects for surgical consideration, whether they are to be regarded as surgical cases or ever come to operation. Whether operation is to be done or not, when conditions do not sound the insistent need of an operation, or the patient declines, or the physician sees reasons against an operation, proper medical treatment should be instituted always, and persistently carried out. This is as true of the gallstone troubles as it is of those of the appendix.

What are such measures? In the acute cases there should be absolute rest of the body. Rest of the stomach and bowels to the extent of starvation for some days is best, especially where peritonitis is present or threatened. Nutrient enemas may be allowed tentatively, but never nutrition by the stomach in such cases. The upper abdominal organs must be kept still; not shaken about by peristaltic movements. During the initial pain it is always best to evacuate the stomach promptly, and for this purpose an emetic of sulphate of zinc is perhaps better than the stomach tube, since it tends to relax spasm and often evacuates food contents that could not pass through a tube. Enemas are best to evacuate the bowels in the acute cases. After starvation begins, the bowels accumulate little fecal matter and give little trouble. General measures to sustain the powers of life, as nutrient enemas and perhaps hypodermics of strychnin, are always in order after a few

days of the starvation. Perhaps there is some benefit to be expected from hot poultices or ice bags over the epigastrium. It is much to be regretted that our views of the exact effect and value of these measures should not be more settled and unanimous than they are; some of us prize the hot applications, some use the cold, while others deny the value of either.

In the subacute and chronic cases the daily full flushing of the bowels by alkaline laxative waters is useful, but it is irrational to suppose that gallstones are thus washed away. Nor do olive oil or any other of the pretended expulsive agents have the smallest effect. The thing that happens is probably merely the elimination of effete matter from the body, thus increasing the physiologic resisting power. This process is aided by a restricted diet of the most proper foods and by general good hygiene. It is the custom in Europe to send patients with chronic gall-tract diseases to some of the spas (mostly to Carlsbad) for a course of the waters, to see if an operation can be avoided by the appearances of recovery. These measures are all useful, for the patient gets the benefit of an abstemious regimen, for a time at least, in addition to the waters, and thus is frequently able to improve in a marked manner.

To go to the springs, drink freely of water and live on a low diet, be much out of doors, and rest from work and perhaps from cares is always wholesome for these cases. Such a vacation can be taken once or twice a year with great propriety, but it has little power to postpone the day of a final surgical operation or death, if, on returning home, the patient goes back to his former habits of overfeeding, irritation of stomach, lack of depuration, and generally unhygienic life. This latter is just what a large number of patients are constantly doing. By this course they invite infection from irritating things in their gall tracts and so hasten surgical intervention. This last is no misfortune if the surgery can be done at the right time and under the best conditions; but they usually regard it as a misfortune and think they are fighting it off by their occasional water cures.

The only proper course for such patients, who would be fairly well and avoid surgery, is to live lives of absolute regularity and abstemiousness, rigidly temperate in everything except the use of water, and hygienic and moderate in every day's living. One day of overdoing, overeating or overdrinking, or of severe chilling of the body, may start an infection and precipitate an acute attack that will destroy life unless prevented by timely surgery.

If a chronic gallstone patient who refuses surgery wishes to manage his health in the usual erratic manner and so make an operation or death certain, it is perhaps his privilege as a citizen to do so. But it is only common fairness that he should know the inevitable tendency of his ways, and it is for the physician to show him this and to point out a wiser course, and then leave the responsibility with the patient, where it really belongs.

Operative Treatment of Lung Cavities.—According to J. Berry, in the *Clinical Journal*, June 6, 1906, incision and drainage constitute the only operation on lung cavities that is of practical importance. This is more feasible in cavities at the base than at the apex or deep seated in the lung. It is indicated in abscess where the results are good (mortality 20 per cent.) and in gangrene (mortality 35 per cent.). In bronchiectasis and tuberculosis the results are not encouraging. A patient with abscess due probably to the bursting of a liver abscess into the lung made a good recovery after operation.

NEPHROLITHIASIS.

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In the searchlight of that greatest of all beacons, pathologic and surgical experience, new territory is being invaded and taken possession of by modern surgery, and fewer and less debatable grounds remain along the border line of internal medicine. In no locality is this better settled than in nephrolithiasis. Stones in the pelvis of the kidney or ureter, when known to exist, are looked on as dangerous foreign bodies and dealt with accordingly. Occupation, locality, or age does not, in my opinion, have any direct etiologic bearing on these cases. As a matter of fact, we do find more cases in persons between the ages of 20 and 50 years, but we find more people between these periods. I have found this condition to exist about equally in the two sexes. High living and sedentary habits are said to predispose to the formation of stones in the kidney, but my experience does not sustain this claim. The separation of the solids from the urine in the pelvis of the kidney gives rise to the condition known to the layman as "gravel" and produces only mild symptoms of mechanical irritation of the ureter, bladder and urethra. This condition may be transient, or it may lead to more serious stone formation by these little particles becoming agglutinated, by the presence of an infection, blood, mucus or pus, yet it is possible for a stone to form without the evidence of bacterial invasion or structural changes in the kidney. The nucleus of a stone may be composed of one salt of calcium, or uric acid, while the body of the calculus is made up of another. Carbonate of calcium stones are rare in man, and are deposited in alkaline urine, while the uric acid and oxalate of calcium are found to have their origin in acid urine. The chemistry of these cases, while very valuable and interesting from a scientific standpoint, is overshadowed by the diagnostic and surgical phases, to the busy practitioner and surgeon.

Oxalate of lime calculi are found most frequently, and usually produce the severer types of symptoms and pathology.

The right kidney, like other structures on the right side of the median line in the abdomen, is the one most frequently affected by stone, yet in rare instances both organs have calculi.

VALUE OF EARLY SURGERY.

To appreciate thoroughly the value of early surgery in these cases, one must understand the pathologic changes wrought by time in the ureter and kidney.

It is only a question of time in every case of renal calculi until an infection is developed, and, when once started, a nephritis is the result; if the ureter is occluded, dilatation of the pelvis takes place, and a pressure obliteration of the parenchyma is sure to follow unless quickly relieved. Perinephritic abscess, with extensive burrowing of the escaped fluids, takes place in some cases. The source of the infection may be from the bacteria in the blood, but usually is from an ascending ureteritis. A surprising number of infectious cases have their origin from the *Bacillus coli communis*, probably by direct invasion through an aseptic adhesion of the kidney to the ascending colon.

The number of stones and their sizes present a wide range, from one to dozens, from a mere speck of sand to a stone weighing many ounces.

I have found that the cases of uric acid stones, as a

rule, have only one small, irregular, angular, speculated stone, while the oxalate of lime stones have been large, multiple stones, with roughened surfaces, taking the shape of the kidney pelvis and calices. The phosphatic variety is usually an irregular, friable, semi-mushy stone found in old suppurative cases (Fig. 1). The carbonate of calcium stone, a rare variety, is smooth, multiple, irregular and very hard, producing kidney structural changes only slowly.

The range in weight of stones removed in my own work has been from a few grains to nearly four ounces. The calculus, as a rule, is found in the pelvis of the kidney or in one of the calices, yet it is of no uncommon occurrence to find a good-sized stone imbedded in the parenchyma. These are the cases that so often give rise to postnephritic abscess. These imbedded stones are often overlooked at the time of the operation.

Morris estimates that both kidneys are affected in about 10 per cent. of the cases. In none of my cases have I found both organs with stones in them.

The uric acid and oxalate of calcium stones form more easily than the pasty, semi-solid, phosphatic deposits.

A small stone may pass from the kidney and give rise

Fig. 1.—Nephritic calculi, carbonate of calcium. Weight, 1,540 grains.

to no symptoms, and a very large calculus may be found as a surprise in the pelvis of the kidney at a postmortem. Several subjective symptoms may be absent in the presence of a stone easily palpable externally.

A healthy kidney is sooner or later converted into a diseased one by harboring these foreign bodies. This change usually takes one of the three courses: Interstitial sclerosis, atrophic changes in parenchyma due to calculous hydronephrotic pressure or suppurative pyelonephritis, and rarely carcinoma or sarcoma as the result of chronic mechanical irritation. These pathologic changes have all shades of variation from a mild microscopic change to a complete destruction of the kidney with death of the patient from coma, amyloid changes in other organs, with a hectic accompaniment and death. While a stone remaining in the kidney is of much danger to that organ, the hazzard is materially increased if the calculus, in its endeavors to reach the bladder, becomes lodged in the ureter. A stone thus situated may cut its way out of the ureter and lead to urinary infiltration, or completely block the flow of urine from that kidney and destroy the functions of the organ by pressure of retained urine, or it may be the source of a calculous anuria by interfering with the function of the opposite organ. The persistence of pain is a matter of no small consequence in such a case.

DIAGNOSIS.

In making a diagnosis of stone in the kidney, it might be well for us always to remember that there are a number of other maladies producing symptoms misleading in character, and, again, a stone may exist without producing the typical stone history, or the symptoms may be manifested in a remote locality. We know that many obscure febrile symptoms are produced by a stone in the gall bladder; the same is true of nephrolithiasis. A stone that disturbs the surface epithelium and permits absorption may give rise to a urinary (septic) chill, the source of which may puzzle the diagnostician. I have seen a number of such cases.

If at a nephrolithotomy a large stone is found and there is a short symptomatic history, we all know that the stone was a long time forming; hence must have had a long quiescent period. I am firmly of the opinion that in such a case symptoms were present, but not correctly interpreted. The use of the microscope and the sifting of obscure evidence will often lead us to make a correct diagnosis where others have failed. Lumbago, a pain referred to the glans penis, or clitoris, increased desire to urinate, retraction of testicle, etc., all, as a rule, are sympathetic manifestations. A carefully compiled clinical history extending over a period of years will often clear the way to a correct deduction. An attack of pain in the side, or back, ten or fifteen years ago, may have been an attempt to expel a calculus that has remained quiescent in pelvis or kidney ever since, the patient being in danger all the time of the development of a suppurative process. Tenderness, as a symptom of renal calculi, is often absent, and too much reliance should not be placed on it. Tenderness, as a rule, is found only in those cases in which there exists a marked enlargement from inflammatory involvement of the kidney. Pain is present in the great majority of these cases. Of much diagnostic value is hematuria, as with few exceptions blood can be detected in the urine unless the ureter is completely occluded. In that event the presence of renal colic or pain, with an enlargement of the kidney, would aid in the diagnosis. The referred pains are often present during the passage of the stone along the ureter. The ilioinguinal, iliohypogastric and genitocrural are the nerves most frequently affected.

In renal colic the typical diagnostic symptoms will depend on the size and shape of the stone, as well as on its consistency and surface condition and on the elimination and nature of the attack, which lasts from a few minutes to several days, and disappears as suddenly as it appeared, the stones reaching the bladder or dropping back into the dilated pelvis of the kidney. These attacks may recur at any time, depending on the number of stones or the ability of any stone to block the ureter.

A feature that is noticeable in many cases is the increase of the pain and colicky spells from riding on a rough road. The pain during the passage of the stone is the most intense of any suffering and is usually accompanied by vomiting and profuse diaphoresis. If much blood or pus is present, a chemical test for albumin may be misleading unless the microscope be used also. Hyaline casts are found in a certain percentage of these cases and are evidence of stone irritation to kidney structure.

Rigidity of muscles on the affected side is often present, while in some cases, if the stone is large, it may be palpated. The *x*-ray, while a valuable adjunct, must not be relied on too much. The negative findings especially should be given little weight, as the thickness of the body and the comparative density of the stones presents such a wide range of resistance to the rays that their use may be misleading instead of an assistance. In doubtful cases, however, I would advise the use of the *x*-ray, and if the clinical history were stronger than the radiographic findings I would rely on the former.

Oxalate of calcium stones (Fig. 2) throw a dense shadow. The same may be said of the phosphate, with a nucleus of some one of the other urinary deposits. The uric acid stone presents the least resistance to the rays, as has been demonstrated by the radiograms recently made by myself and Dr. McCandless.

In arriving at a diagnosis of nephrolithiasis, a number of other conditions presenting very similar symptoms must be eliminated. With blood in the urine increased by exercise, pain along the ureter and severe colicky spells and a history of passing one or more stones, a diagnosis of stone is easy.

DIFFERENTIAL DIAGNOSIS.

The various diseases affecting the structures in the vicinity of the kidney may mislead one, but, as a rule,

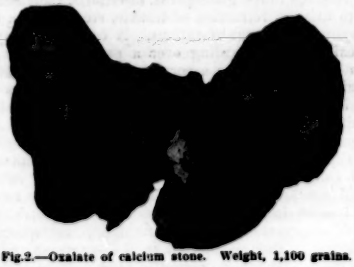

Fig. 2.—Oxalate of calcium stone. Weight, 1,100 grains.

the symptoms of these affections are such as to point to an easy diagnosis.

Neuralgia and muscular rheumatism, while often found in the vicinity of the kidneys, are usually of a transient character and have symptomatic traits peculiar to themselves, as a bilateral tenderness and a stiffness of muscles, either from pressure or movements of the body. If the diagnosis can not be made otherwise, a course of antirheumatic treatment may assist. Spinal caries and other diseases of the vertebra, in their early history, are confusing when compared to the masked cases of stone in the kidney, but a resort to the microscope and a little time will usually eliminate the simulated diseases.

Neuralgia due to vasomotor disturbances in the kidney has led to a number of mistakes, and many patients have been operated on and no stone found; but, thanks to the splitting of the capsule and relief of the tension, most of these individuals are cured by operation. Patients who pass large quantities of oxalate of calcium crystals form a class of cases under the general head of neurasthenics and present many symptoms of early nephrolithiasis, the so-called "gravel" cases. In these cases it will often be hard to determine the exact extent of the pathology. Displacements of the kidney, presenting a "Deitel's Crises," are usually easily diagnosed.

While the late symptoms of tuberculosis of the kidney are very typical, the early manifestations are equally misleading. With pus in the urine, frequent micturition, some hematuria and pain in the back, with colicky spells due to the passage of cheesy débris, the history certainly simulates stone.

A close scrutiny of other organs of the body should be made for tubercular foci, as the testicle, bladder, lungs, prostate and seminal vesicles, and tubercle bacilli in the urine should always be looked for. Hectic symptoms may exist in both conditions as a late manifestation. The presence of stones in a tuberculous kidney is not unusual, the phosphatic stones predominating. In most of my cases the right kidney has been the one affected, and the symptoms have been of such a character as to point definitely to the organ diseased, yet in some cases it has been rather perplexing to determine not only which kidney was diseased, but whether or not the other was affected also.

The knowledge of the exact location of the stone prior to operation is of value only in as far as it concerns the position of the incision, yet this is not of much value, as the kidney should be explored in all cases, even though the stone producing the symptoms is located in the ureter, the possible exception to this being in female patients in whom the stone can be removed through the vagina or directly by the bladder route. The cystoscope, while of great aid in diagnosing diseases confined to the bladder, has been found of little value in doubtful cases of stone in the kidney. However, it has its use as an aid to the introduction of the ureteral catheter in investigating some extremely obscure ureteral and kidney symptoms. The collection of urine from one or both kidneys separately is often necessary to determine the source of abnormal constituents found in that fluid.

Kelly and others, by the aid of wax-tipped ureteral catheters, have detected stones in the pelvis of the kidney. This procedure is one that requires much skill and will rarely be resorted to as an aid to diagnosis of stone in the pelvis of the kidney. The condition of the opposite kidney, or even its presence, should be demonstrated in every case in which the question of a nephrectomy is being considered. Palpation of the opposite kidney can often be accomplished, and the study of the character of the urine and the amount and ureteral catheterization will aid in making a diagnosis. The history of one kidney being hydronephrotic, while normal urine is being passed from the other, will point to one healthy kidney.

PROPHYLAXIS AND MEDICAL TREATMENT.

The function of the kidney being essential to life, it behooves the physician to preserve this organ by every possible and safe means. A crippled kidney from stone injury regains its function in a surprisingly short time if the source of the injury is removed, the rapidity of this recuperation depending on the length of time, the size of the stone, its location and the extent of the destruction of the pelvis and parenchyma. A recognition of these truths should admonish us to resort to early surgical interference when once the diagnosis is made.

Nephrolithotomy is considered one of the safest operations in surgery, unless by delays the case has assumed a grave character by the destruction of the urine-manufacturing portions of the organs.

No case should be permitted to go on until abscess in perirenal structures has developed or until urinary fistulæ have formed, obliterating all normal structures surrounding the organs. Conditions such as mentioned

above add very materially to the difficulties and dangers of the operation, preclude in many cases the possibilities of saving the kidney, and make the convalescence a very unpleasant and tedious one, marked by suppuration, urinary fistulæ and more surgery.

A healthy kidney, when incised, heals as readily as any tissue in the body.

I have much faith in the prophylactic management of these threatened stone cases, but no reliance should be placed on methods advocated to dissolve and to remove stones when once formed. It is true that Nature in many cases will cause the passage of small stones, but we should not deceive our patients and delude ourselves in the belief that our efforts are of much avail in her behalf.

In a patient known to be suffering from "gravel" (passage of large amounts of oxalate of calcium or other crystals) the regulation of this diet, drinking of much water and the administration of the alkalies, potash, soda and benzoate of lithium, to prevent the deposit of these crystals, will be of much benefit. Piperazin, in from five to twelve grain doses, given three times a day, is highly extolled.

Urotropin (hexamethylenamin) is another remedy much used, as it does not derange the digestive organs and is a good urinary antiseptic.

The unfortunate feature of medication in these cases is the fact that only too often an incorrect diagnosis is made, and the medical treatment is persisted in to the extent that the very dangers we wish to avoid are permitted slowly to take place—that is, extensive injury to the kidney structure and the crippling of its function.

A patient suffering from an attack of renal colic will require large doses of morphin to relieve his pain, but it might be well to recall the fact that pain produces a tolerance of this drug, that the kidneys are one of the main sources of its elimination, and that the pain often ceases suddenly, leaving the patient in a condition of profound stupor from the cumulative action of the repeated doses of the drug at short intervals.

The medical treatment in these cases, of course, is palliative only, but must be resorted to, as in many cases while we are making the patients comfortable the calculus may pass, and with proper after-care another may never develop.

The operative indications in nephrolithiasis are fairly well marked in most cases, yet in some the case may assume a borderline position and require very careful analytic consideration as to its proper management.

OPERATIVE TREATMENT.

Hematuria of long duration or oft repeated may demand operation. Renal colic recurring often and severe would also indicate an operation. The presence of a stone in the pelvis of the kidney, whether producing colic or bloody urine, is a source of danger and should be removed. Chronic invalidism, when due to the presence of a stone, is often cured by the removal of a stone in the kidney that was not producing any local symptoms of a grave character.

When it is possible (and this is usually the case) a nephrotomy should be the operation of choice. The same incision is made for a nephrotomy as for a nephrectomy, that usually preferred being the oblique incision extending from an inch below the border of the last rib in front of the erector spinæ, downward the distance necessary. A few branches of the intercostal and lumbar vessels may require ligating; the nerves of the same name will also be encountered and should be shoved aside when possible. The costoiliac space of the diseased side may be increased by a good-sized sand bag or roll of sheets placed on the opposite side, the patient being practically in the Sims position.

The kidney can usually be delivered into the wound, and an exploration by palpation or otherwise made. In those cases in which the perirenal structures have been inflamed and converted into a vascular dense mass the delivery of the kidney is in most cases impracticable owing to the profuse bleeding when this vascular capsule is torn. The organ can then be explored by needling in all directions, taking care to avoid the larger vessels at their entrance into the hilum. While one may miss a small stone by this process, it will be the exception. If the presence of a stone is strongly suspected and the needle fails to find it, an incision on the convex surface of the kidney should be made, and the pelvis explored carefully with the finger. A stone with only the thickness of the ureter or pelvic structures can usually be detected by palpation, but small stone attached in the parenchymatous crater may be overlooked. If the stone is not found by needling or digital exploration, a metallic ureteral catheter should be gently introduced and the ureter sounded. This failing, I have for a number of years resorted to hydrostatic pressure to test the

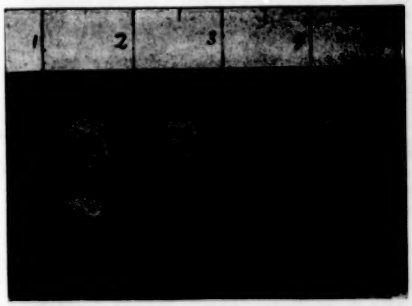

Fig. 3.—Phosphatic stones.

patency of the ureter, and in two instances have succeeded in forcing stones into the bladder from the lower portion of the ureter. This procedure I always resort to after clearing the pelvis of stones as a precautionary routine to test the condition of the ureter.

The hemorrhage, on introducing the needle, is often quite profuse, but always stops of its own accord within a short time. The flow of blood from an incision into the kidney is alarming, but is quickly controlled by the pressure of the exploring finger, and if the kidney can be stitched at the completion of the operation the flow of blood can be checked. If a stone is detected its removal should be carried out with the utmost care lest it be crushed and small particles escape into the ureter or remain as a nucleus for the development of more stones.

If small particles have unavoidably been detached, or if there exist many small stones, the assistant should compress the ureter or twist the pedicle. A good gauze pack against the ureter will prevent any small particles getting beyond easy reach of the operator or his irrigating fluid. A gauze pack beneath the delivered kidney will also aid in controlling the bleeding during the

operation. On two or three occasions I have resorted to the use of rubber tubing carefully tightened about the pedicle of the kidney to limit the loss of blood. This will rarely be necessary.

After the stones have been removed, the kidney irrigated and the patency of the ureter established (if the case was not one of severe infection), the kidney may be closed as with any other wound, using chromicised gut for that purpose, taking care that the sutures do not go through the pelvis and thus act as a nucleus for further stone involvement. If it is a suppurating case the pelvis should be packed with gauze and a rubber drain put in. The gauze will aid in controlling the bleeding, especially if good firm pieces of gauze packing are put in around the kidney also. The wound is dressed in the usual way. This gauze should remain in place for several days, as a too early removal will induce a troublesome hemorrhage. Do not become discouraged at the duration of the drainage, as many of these old cases will drain for months, ultimately closing for good.

The removal of the kidney in any case is a matter that should receive very careful consideration. The indications for a nephrectomy are becoming fewer and rarer, as we understand the dangers of such a removal, and the recuperative powers of a crippled kidney if the source of irritation is removed.

When possible, the stone should always be removed through the parenchyma, as an incision into the upper ureter or pelvis will incur more risk in the development of an unhealed urinary fistula.

CONCLUSIONS.

1. Nephrolithiasis is more prevalent than is generally supposed.

2. A stone having formed in the pelvis of the kidney, if too large to pass, will sooner or later produce symptoms demanding its removal.

3. Suppuration in stone cases as a rule is a late process, and should be prevented by early surgical treatment.

4. There exists a special cause for stone development in the right kidney; 80 per cent. of my cases have occurred in the right kidney.

5. With a carefully obtained clinical history, the diagnosis of stone in the kidney is easy.

6. Obscure, persistent pains in the region of the kidney, in a patient who had a renal colic years ago, should lead to an exploration of the organ.

7. A wound in a healthy kidney heals quickly.

8. The operation of nephrolithotomy has a very low mortality.

9. Hemorrhage from a kidney is generally easily controlled.

10. At time of operation, the patency of the ureter should be established.

11. The kidney should not be removed if it has a patent ureter or unless it be practically destroyed by the disease.

12. Postoperative patience and faithful effort on the part of the surgeon, will result in the saving of many organs; otherwise removal will be necessary.

Typhoid Strumitis.—Inflammation of the goiter is described by Baradulin in a man 36 years of age who had had a goiter for 29 years. During the fourth week of typhoid fever an abscess developed in the right half of the goiter, which was opened, and bacteriologic examination revealed typhoid bacilli. —*Russky Vrach*, No. 14, 1906.

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER AND ITS RESULTS.*

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The contributions to the literature of ulcer of the stomach and duodenum have become so numerous that it will be impossible in a paper of this character to give credit for the many valuable advances which have been brought out by individual workers. I wish in this connection, however, to express my appreciation of their labors.

For more than twenty years the complications of this malady have received attention. Operations for benign stenosis of the pylorus and some acute secondary manifestations have occasionally been performed, but not until the last five years has there been a surgical invasion into the field of unhealed ulcers with a view of giving relief from pain, under-feeding and chronic disability which so frequently accompany the disease.

Acute ulcer of the stomach and duodenum properly belong to the domain of internal medicine, and surgery has to do only with the complications such as perforation, hemorrhage and obstruction.

The surgical treatment of acute perforations of the stomach and duodenum is now on a sound footing, the results depending on speedy diagnosis and prompt operative relief. Patients operated on within the first five hours usually recover; after ten hours the majority die. We have had 7 gastric with 2 deaths and 9 duodenal with 3 deaths.

Suture of the perforation and pelvic drainage with or without irrigation, the patient being subsequently maintained in the semi-sitting posture (exaggerated Fowler's) for several days, gives the best results.

One mooted point concerns whether or not a gastrojejunostomy shall be done at the same time, as a considerable percentage of patients following perforation will develop stricture, adhesion, or other deformity in the healing process. If the perforation lies in the duodenum or close to the pylorus it should be sutured transversely to avoid interference with the lumen of the part involved. Generally speaking, if it seems probable that stricture or other secondary condition will result and the patient is in good condition, gastrojejunostomy should be performed providing it can be done without spreading the already present infection. If in doubt, a living patient is better than a completed operation at a greatly enhanced risk.

Hemorrhage from the stomach occurs in two forms, acute and chronic. Recurring acute hemorrhages are best treated by opening up the stomach or duodenum, locating the bleeding point and suturing the part firmly with catgut on a curved needle from the inner (mucous) side. The outer surface is then exposed and protected over this area by a few mattress musculoperitoneal sutures of linen (modified Andrews method). We have not found gastrojejunostomy for acute hemorrhage a reliable procedure. Out of 6 cases we have had 1 patient bleed to death within two weeks after gastrojejunostomy and a second saved by opening up and securing the bleeding vessel, while 5 who have been treated by primary operation on the bleeding point with or without excision of the ulcer; all recovered.

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Chronic hemorrhages, on the contrary, can be cared for by gastrojejunostomy, especially if the ulcer is situated in the duodenum or near the pylorus. In a number of instances we have, however, excised the ulcer and closed the defect by plastic operation planned in such way as not to interfere with drainage by subsequent contraction. Several of these cases amounted to gastric resections with end-to-end suture.

gical interference should be considered when the failure of medical treatment is made manifest by a continuance of the symptoms or frequent relapses.

Our experience (W. J. and C. H. Mayo) covers 600 operated cases up to May 1, 1906, 436 stomach, 135 duodenal and 28 stomach and duodenum. In 46 classified as duodenal the duodenum was primarily at fault, the stomach being involved only at the pyloric ring. It was rare

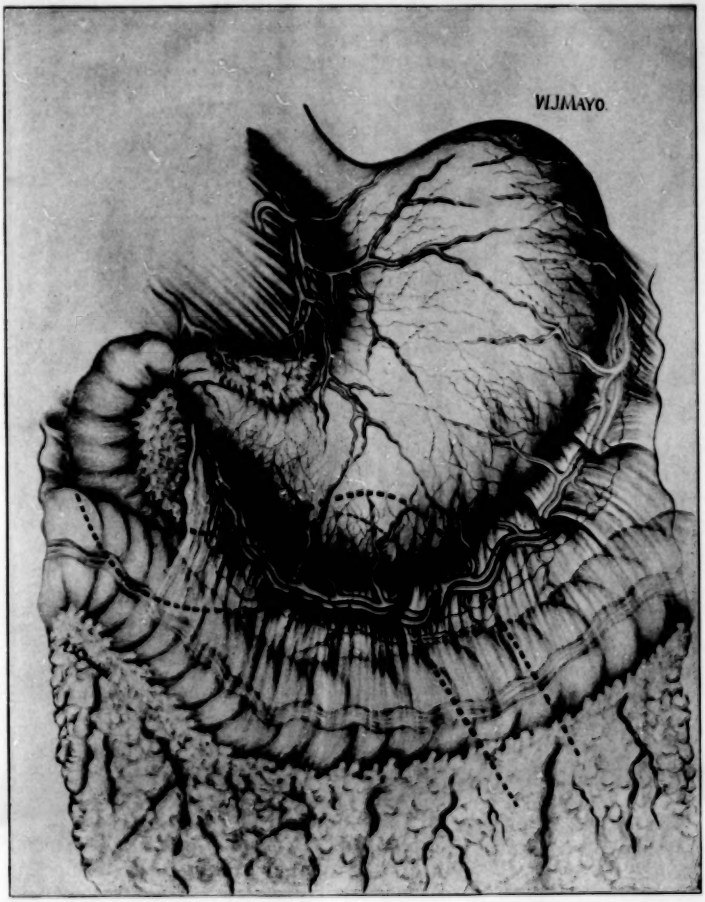

Fig. 1.—Dotted lines show posterior "no loop" gastrojejunostomy.

CHRONIC ULCER.

Chronic ulcer of the stomach and duodenum is most common in men and is essentially a disease of adult life. It entails years of invalidism on the victim and in fully 25 per cent. is the direct cause of death, while indirectly through anemia it permits of general infections, tubercular or otherwise, and thus doubles the mortality. Surgical interference should be considered when the failure of medical treatment is made manifest by a continuance of the symptoms or frequent relapses.

that a gastric ulcer did not stop abruptly at the pylorus.

Gastric ulcers were multiple in less than 15 per cent. of the indurated and estimated at about 20 per cent. of the mucous lesions. The most common form is the saddle ulcer of the lesser curvature above the pylorus extending flap-like down the anterior and posterior wall (prepyloric).

Duodenal ulcers involve the two inches immediately below the pylorus and extend up to within at least three-fourths of an inch of it. In all but 5 cases the bowel lesion was single.

Of the 163 duodenal ulcers, 77 per cent. were males and 23 per cent. females and in all but 7 cases the site of the ulceration was indurated, the thin intestinal wall enabling ready identification. In the stomach, on the contrary, the thick tissues sometimes prevented accurate localization of a mucous lesion, the proportion being 70 per cent. indurated and 30 per cent. non-indurated. Three of the acute hemorrhagic cases were of the mucous variety, while all but one of the acute perforations occurred through the scar of a partially healed ulceration.

The predominence of the indurated over the non-indurated is even greater than would appear from these percentages. During the past year more experienced surgical examination has shown that over 85 per cent. of the stomach ulcers coming to operation have been indurated and less than 15 per cent. non-indurated. There is no question but that the frequency of non-indurated mucous lesions in the stomachand duodenum has been and still are greatly exaggerated. The very large majority involve all of the gastric coats and are capable of demonstration at the operating table. Gastric ulcers were found with nearly the same frequency in males and females. In this connection I would again call attention to the fact that ulcer of the duodenum is nearly as common as in the whole of the stomach and as more than three-fourths are in males the increased frequency of

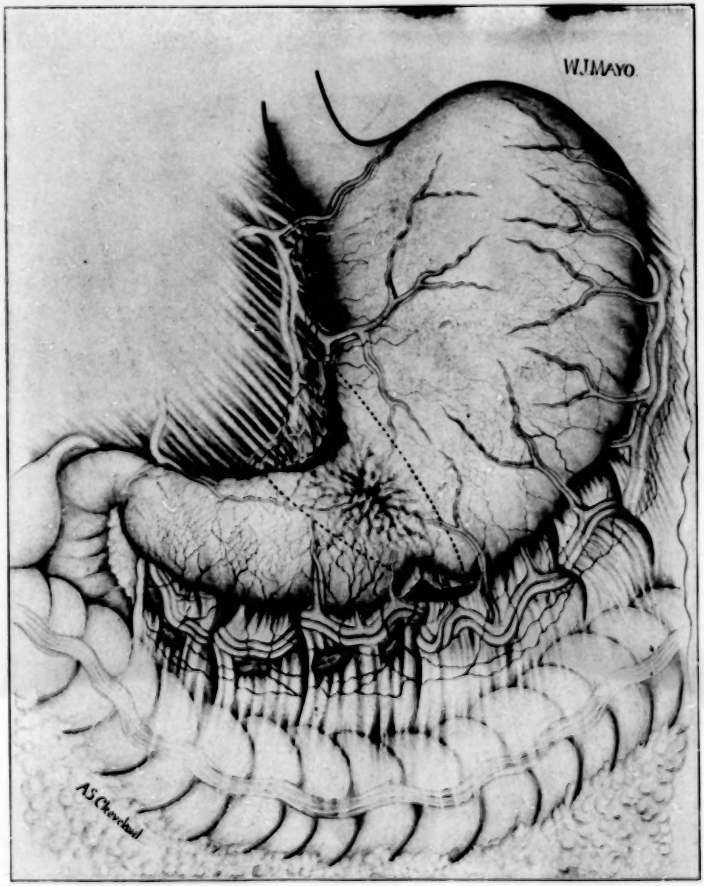

Fig. 2.—Resection of hour-glass stomach with fields in gastrohepatic and gastrocolic omenta ligated. Dotted lines show site of proposed resection.

occurrence of gastric and duodenal ulcer in the male sex is accounted for. In our earlier work duodenal ulcers in the vicinity of the pylorus were classed as pyloric and added to the gastric group. In the past two years we have learned to differentiate more accurately and in the last 100 gastric and duodenal ulcers operated on, 47 were duodenal, 44 gastric and 9 had an independent ulcer of

GASTROJEJUNOSTOMY.

Gastrojejunostomy is the operation which has justly earned the most prominence in the treatment of gastric and duodenal ulcers. It is based on the common sense principle of giving rest to the diseased part by diverting the food and gastric secretions to a new outlet which should be on the storage side of the stomach at its lowest

Fig. 3.—Resection of hour-glass stomach, inner row of sutures nearly completed (catgut), outer row completed on posterior surface and beginning on upper anterior surface (linen).

each organ.; 62 were males and 38 females; 87 out of the 100 were of the indurated variety.

That a very large proportion of chronic ulcers are medically incurable is recognized by the majority of unprejudiced investigators. It now remains to be shown whether operative treatment is justified by its results.

point under the cardiac orifice. The method of choice is the one without a loop made on the posterior surface through an opening in the transverse meso-colon. The distal end of the jejunum is attached to the lowest point and to the left, the proximal part to the right three-

(Continued on page 931.)

SOME PATHOLOGIC FEATURES OF THE PULP.*

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In offering for consideration a few ideas on the diseases of the pulp, I do not mean to infer that its pathology is different from that of any other part of the body. As a general rule, inflammation presents the same set of phenomena wherever it is situated, subject to the variations peculiar to the organ in its especial location. We must never forget that disease of an organ is seldom or never a local affair; in other words, its effects are far-reaching and other structures must always become involved. In teaching the subject, this point is one that is very difficult to impress on a student's mind, for collateral anatomy, physiology and pathology seem to be forgotten in studies in the special structure under consideration. A simple carious cavity is not the only thing by which to diagnosticate a patient's suffering.

Fig. 1.—Hyperemia of pulp. Stasis in vessels. Cells just trying to escape through walls. Note nodes of Ranvier in nerve fiber bundles. Myelin collecting in masses and degenerating.

Fig. 3.—Rhexis. Extravasation from vessels; edema; cell proliferation. Early pulpitis.

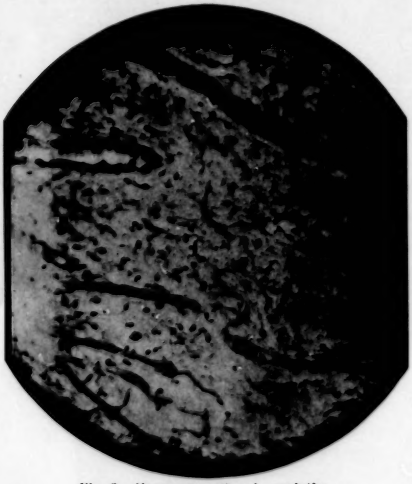

Fig. 2.—Hyperemia and early resolution.

Fig. 4.—Tortuous vessel of pulp; showing danger if interfered with. Edema. Cloudy swelling among the cells and badly staining reaction.

HISTOLOGY OF THE PULP.

In former papers given in this Section[1] will be found a general résumé or compilation of both the histology and the bibliography of the pulp. It will be

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. THE JOURNAL A. M. A., 1901, 1902, 1903. Especially "Résumé of the Histology of the Pulp." THE JOURNAL, July 12, 1902

noted that as yet very little, if anything, is absolutely proved in its structure, and it is essential for our science that more work should be done along these lines of research. The histology and pathology of the pulp are simple, in some ways, yet at the same time very difficult. The structure of the pulp is not analogous to any other permanent tissue of the body. It has been likened to the umbilical cord or Wharton's jelly. Certainly the varieties of cells are many and their anastomosing processes are very difficult to demonstrate with the ordinary stains. If they are true connective tissue, Van Gieson's method should give the red reaction, but it does not, even with the coarser fibers for which it is best applicable.

In some special cases in which the pulp is of a more firm structure, almost fibroid, it is excellent. In earlier cases, as in the growing pulp, I have had better results with Ribbert's phosphomolybdic-acid-hematoxylin stain after alcoholic fixation which shows the finest fibers of connective tissue, if present. In fetal sections, the method of staining with sulph-indigotate of sodium and carmine is excellent.

The great difficulty that I have encountered in my

Fig. 5.—Pulp and peridental membrane, showing calcification around pulp or nerve. Note the many minute canals in same section often a cause of repeated attacks of pain after so-called pulp extraction in pyorrheal teeth.

Fig. 6.—Same as Fig. 5, but magnified to show the condition of the pulp vessels. Arteriosclerosis. Venous thrombus.

Fig. 7.—Proliferation of round cells; early fibrous tissue formation; resolution of pulpitis.

Fig. 8.—Coagulation necrosis. Areas of early suppuration. Capillary embolism.

work has been to determine what comprises a normal pulp. As yet the histology is incomplete, and if we compare structures in sections taken at different periods of life we find a difference in them, especially in the first molars, which have non-striped muscle fibers. So far it has not been easy to obtain freshly extracted teeth at stated periods so to make a study from an average of a number of cases of healthy persons. According to Dentz, those extracted for irregularities are abnormal in many cases. From this it will be seen that it is sometimes difficult to find a particular pulp showing

Fig. 9.—Interstitial pulpitis with pulp stone in situ.

some early pathologic condition, and nowhere is this more true than in the different forms of pulpitis as classified by Arkövy. Again, so little case-recording has been done in a systematic way that we are far from sure of clinical signs as yet given; certainly they do not agree with the pathologic findings.

Fig. 10.—Abscess, limiting wall of round celled infiltration, or so-called pyogenic membrane ulceration. Gangrene. Odontoblastic layer.

SYMPTOMS OF PULP DISEASE.

Our text-books show that a whole series of diverse diseases of the pulp produce like symptoms, and that a whole series of diverse symptoms have for their basis a like pathologic picture. The location, the physiologic disturbances and the diseases to which the pulp is subject are more destructive and far reaching than in any other organ of the body where we have an outlet by the anastomoses present. The only method of relief in many cases lies in lessening the circulation through the vasomotor system and depletion through the excretory organs so often evidenced by the sudden stoppage of the pain when a patient is frightened on reaching a dentist's office.

CHANGES IN THE PULP.

In the case of the pulp we must consider the following facts: a. The delicate structure of the pulp is apt to undergo rapid secondary changes after an inflammatory attack whether from a constitutional or a local cause. b. Its location and poor methods of egress for exudations and dangers from compression. c. Fissures and lesions of dentine and enamel are not always able to recuperate for perfect repair. d. If a pulp has been exposed it is difficult to disinfect and hermatically to seal it under artificial methods, for chemicals act differently in different teeth and individuals. e. The small surface, the many enemies of both a bacteriologic and anatomic nature, together with almost invisible cracks in the enamel (only seen when the teeth are dry) render the occurrence of inflammation, even before decay has apparently reached the surface of the pulp, almost a sure occurrence. (*f*) The position and relation of the pulp, for in ill-developed teeth the pulp chamber may extend by minute processes abnormally near to the sur-

Fig. 11.—Reticular atrophy of the pulp (fibroid). Myxomatous reticulum nuclei at points of intersection and calcareous degeneration.

face or even to the enamel. In such teeth many interlobular spaces are usually seen in the dentine, and the ready absorption of oral fluids and growths of yeast organisms soon cause caries. This is especially the case in the temporary incisors and the first permanent molars in early childhood and after infectious or gastrointestinal diseases followed by chemical abrasion and erosion and hyperemia of the pulp due to irritation of the nerve mechanism of the pulp. g. The question of whether lymph spaces are in the pulp or if the dentine may not act as an analogue through the tubules is still under discussion. The lymphatic supply of the jaws and teeth has not yet been determined.

PULPITIS.

Let us now review the most common disease of the organ, viz., inflammation, and follow the stages.

Definition.—The definition given by the late Sir John Burdon-Sanderson is perhaps one of the best to cover so many processes and variations in different cases. "Inflammation is the succession of changes which occur in a living tissue when it is injured, provided that the injury is not of such a degree as to destroy at once its structure

and vitality." To follow the pathologic changes Podwyssozki's definition is good. "Inflammation is a local reaction of the living tissues against the irritating substance. This reaction is chiefly produced by a phagocytic activity of the mesodermic cells, and it may precipitate not only changes in the vascular system, but also the chemical action of the blood plasma and tissue fluids in liquefying and dissolving the irritant agent."

Etiology.—The causes of inflammation are usually:

A. Predisposing:
1. Deficient blood supply through walls.
   (a) bad air, (b) food,
   (c) hemorrhage, (d) anemia,
   (e) heart disease, etc.
2. Presence of impurities or poisons in the blood, as in:
   (a) chronic alcoholism, (b) Bright's disease,
   (c) diabetes, (d) gout,
   (e) syphilis, (f) lead, phosphorus and mercury poisoning.
3. Deprivation of healthy nerve influence by injury of a nerve center or trunk.
4. Strumous diathesis.
5. Old age.

Fig. 12.—Fatty generation of pulp. Sclerosis of nerve bundle. Interstitial pulpitis.

B. The exciting cause is always an irritant, which may be:
   (a) *traumatic*, direct violence.
   (b) *chemicals*, acids, alkalies, caustics, vesicants.
   (c) *bacterial* fermentation, irritants, putrefactional, ptomains, leucomains.
   (d) *electric*, battery, lightning, non-insulated wires.
   (e) *thermic*, heat and cold.

Symptoms and Signs.—These may be:
1. Irritant.
2. Granulation.
3. Determination or active hyperemia.
4. Disturbance of circulation.
5. Increased motion, oscillation, retardation.
6. Stasis (partial or complete).
7. Vascular dilatation.
8. Exudation—migration, diapedesis, rhexis, etc.
9. Swellings, edema.
10. Terminations and sequelæ.
   (a) Resolution, absorption, or organization. { 1. Vascularization, 2. Granulation, 3. Scar tissue (cicatrix).
   (b) Chronic inflammation or sclerosis, fibroid thickening, interstitial pulpitis, cirrhosis. { 1. Hyperplasia, 2. New formations (neoplasm).
   (c) Suppuration.
   (d) Abscess, necrosis.
   (e) Ulceration.
   (f) Gangrene.

Fig. 13.—Colloid degeneration. Calcification not present of reticular or fibroid degeneration.

Chemical products of putrefaction are the chief agents in producing spreading inflammations. For fermentation or putrefaction (sepsis) there must be (a) dead animal matter, (b) some water, (c) oxygen, (d) a certain temperature, (e) presence of a ferment, which is the product of living micro-organisms. Species *Schizomycetes* (bacterial) known as saprophytes.

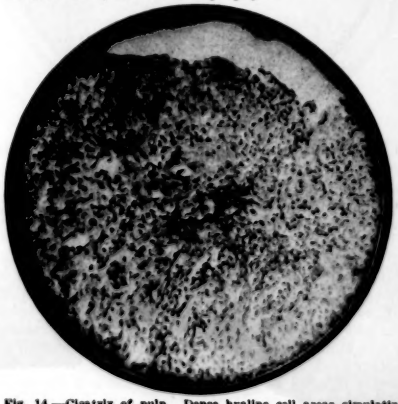

Fig. 14.—Cicatrix of pulp. Dense hyaline cell areas simulating granulation of epithelium.

The inflammation is caused not by the bacteria, but by the chemical products (sepsin and ptomains) which form in putrefactive processes, soak all the tissues and act like any irritant fluid or poisonous alkaloid.

The Bacteria of Inflammation.—Infective micro-or-

ganisms are important in cryptogenic or so-called idiopathic inflammations. Erysipelas and some forms of periostitis, pulpitis, periodontitis seem to depend on these germs and malignant pustule is proven to do so. These bacteria multiply and produce irritating products called ptomains which set up inflammation. Saprophytic bacteria live only on dead animal matter and are incapable of existing in live tissues. Some species by protoplastic activity obtain food from dead organic material, multiply and cause changes in the fluids in contact with their surface, known as fermentation. To this process are due: (a) Decomposition of serum and pus in a wound; (b) conversion of milk sugar into lactic acid in souring of milk in the stomach; (c) conversion of urea into ammonium carbonate, and so formation of ammoniacal urine in the bladder, causing cystitis, etc.

Albumin of dead organic matter in contact with these bacteria decomposes into peptones, then into ptomains and so into alkaloids.

Mode of Entrance of Bacteria.—Bacteria may effect an entrance (1) by a wound, thus producing local inflammation; (2) by lymphatics, whence they proceed

Fig. 15.—(Neoplasm). Epithelioma of pulp.

to the nearest lymphatic glands, where they may be arrested; (3) by the circulation; (4) they may get into small veins and so gain the circulation at once and lodge in capillaries of the various organs; (5) from mucous membranes, as in gingivitis and diphtheria; (6) by migration from one point to another, as by extension of pulpitis gangrenosa to the submaxillary glands, as phthisis spreads from the larynx to the intestines or bronchial glands to lungs and so into the circulation. Influenza is often a cause of otitis media, oral infection and death of a pulp; (7) diseased tissue produced by one kind of bacteria may be secondarily infected by another kind. For example, croupous pneumonia is frequently infected by the tubercle bacillus and the tuberculous tissue by the pyogenic micrococcus (mixed infection). Influenza bacilli in the blood reach the pulp and cause pulpitis, ending in gangrene and cellulitis.

PROTECTION OF TISSUES AGAINST BACTERIA.

The tissues may be protected against bacteria (1) by exhaustion of the soil or acquired immunity, as one attack usually exempts from a second (example, variola); (2) by chemical products formed, *pari passu*, with the bacteria acting as a poison to the bacteria and preventing their development (chemotaxis). Toxins are repellant, producing a "negative chemotaxis:" (3) By tissue cells collecting around the bacteria and so killing them; (4) by phagocytosis, the cells absorbing and destroying bacteria.

Reaching the Pulp.—The irritant may reach the pulp in several ways: (1) By direct exposure as a sequel to caries, erosion, abrasion, fracture, etc. (2) Exposure of the dentinal tubules through trauma, filling, etc., and transmission by the fibrils of irritating stimuli as acids, metal fillings too close to the pulp. (3) Through the apical foramen as sympathetic depressions which may pass from the seat of injury in one part of a nerve tract and produce symptoms at a different terminal. For example, irritation by pulp stones in the third molar may cause hyperemia of the pulp in a premolar. Pulp stones in a third or second molar may cause a neuritis in the infraorbital nerve at its foramen of such a character as almost to indicate antral involvement. (4) By

Fig. 16.—Vasomotor system, pulp, nerve degeneration slight, myelin, nodes of Ranvier.

contact with the periodontium, especially in connection with constitutional effects as infectious diseases, mercurialism, rheumatism, malaria and especially when much arteriosclerosis is present.

PATHOLOGY.

When any sufficient irritation is present an active hyperemia follows, partial or complete, as in one of the cornua or radicular portions or all (Fig. 1). The cause if quickly removed may result in the pathologic symptoms abating the leucocytic migration stops, the cells are reabsorbed and no evidence is left. This is the so-called, but erroneous, "irritation of the pulp," for irritation is not the actual disease, but the cause. So far as caries is a cause of hyperemia we must recall that clinically we have a difference in the signs as presented by the type of cavities. There is, first, the cavity as seen at the cervical margin due perhaps to chemical erosion or mechanical abrasion, being sensitive to touch and conveying sensations, and, second, the further advanced type of caries, insensitive, which hardly, if ever, admits the

slightest impulses to the pulp. If we study the tooth structure in these two classes we shall find different changes as regards the pulp tissue, the odontoblasts and the dentinal-enamel region, with a possible increase of interglobular spaces, and in the odontoblastic zone, an excess of calcoglobulin about the germinal odontoblasts, which latter are increased in number in the hyperemic area. Some cell proliferation is also present, (Fig. 2), showing that Nature is trying to protect herself and to protect the pulp as long as she can, thus cutting off the trophic sensations by increasing the resistance to stimuli and filling in the cavity by new if imperfectly organized tissue. Whether the odontoblasts have more to do with the vasomotor system than with dentinification is as yet an open question, but clinically it would seem as if they have, or at least that they assist more materially.

Pulpitis is the common termination of hyperemia, and histologically the pulp shows very different degrees of interest. Cases should be taken from teeth, first, in which caries has not penetrated into the cavity and,

Fig. 17.—Nerve degeneration; thickened fibers. Nuclei well marked.

Fig. 18.—Arteritis obliterans of pulp. Parenchymatous degeneration. Thickened nerve bundles in pyorrheal tooth.

second, in which there is exposure. We find in some specimens a well-marked cell infiltration, dilated vessels on account of the stasis of the circulation and evidences of edema which may be seen by the poor staining of the tissues which look water-logged (Fig. 3). This distension shows the clinical evidence of pain by pressure of the odontoblasts against the dentine and the constriction by the alveolar dental membrane through inflammation of the vasomotor nerves scattered through the pulp and constriction of the vessel walls (Fig. 4). The endothelial cells are easily lost by the dissolution of the cement substance, and with the cell changes we obtain clotting, thrombosis and embolism (Figs. 5 and 6). This condition I have often seen in teeth extracted for interstitial gingivitis or pyorrhea.

A CASE OF PULPITIS.

Let us take for examination a tooth which has been the subject of periodontitis followed by a pulpitis and then quieted down. Note, first, the thickened membrane and that at certain places there are absorption areas or excavations with large giant cells;[2] in another place in this root are older absorption spots and a layer of new tissue filling them up and increasing the size of the tooth (hypercementosis). The pulp cavity shows that there has been a change in the layer of odontoblasts which form the attachment and act as a source of nourishment from the pulp to the dentine. It is from this layer (the connecting link between the hard calcified dentine and pulp matter) that the so-called secondary dentine is formed, but under certain circumstances the characters of the cells forming this layer change both in size and shape (Fig. 5). If we have a hyperemic condition or slight pulpitis, a great amount of blood is brought to the pulp blood vessels. These cells lose their shape, swell up, the nuclei become active and new cells are rapidly formed by mitosis (Fig. 7). As these new cells proliferate, a thickened membrane-like layer is seen pressing on the dentine and so causing an absorption of the latter in order to gain more room for growth (Fig. 6). Just so long as we have an abnormal blood supply to the pulp, a long or short time of pressure on the hard walls, so long do we have few or many absorption areas which may be superficial or deep. If the tissue is imperfectly calcified around the pulp canal, the giant cells will more easily penetrate and pass out in all directions continuously or intermittingly, depending on what changes are going on externally on the tooth or in its cemental layer. If extracted about this period nothing is found of the pulp or only a thickened membrane on the pulp canal walls. These changes are produced by the odontoblast layer of the canal, and if not extracted we find the pulp congested, odontoblasts altered or destroyed and no connection with the tubuli (Fig. 8). In the dentine, giant cells are becoming formative agents, building a new tissue resembling a poor type of dentine, cement or bone-like material with its lacunæ and canaliculi in the en-

2. Coyne and Cavalié: Anat. Anzeig., 1905, vol. xxvii, p. 205.

larged pulp, developed from a membrane very similar to that of the periodontium. These same changes may be seen in the incisors of horses, cows and dogs. The vascular system returns to the normal. Clinically the tooth is tender to percussion almost as in periodontitis; this gradually subsides until another inflammatory attack recurs, then interstitial periodontitis with resorption and loosening of the tooth. If this continues we may have to extract the tooth, for through this calcific degeneration we may have many reflex conditions as well as gingivitis, even to suppuration (Figs. 10 and 11).

In the more chronic cases we really see the influence of the defective ways of egress. Everything in the way of pathologic histology which belongs to the retrogressive disturbances of nutrition may occur, as interstitial pulpitis, suppuration, necrosis, gangrene and the various degenerations (Figs. 8 to 13). When a tissue is dead we never hear of its recovering. But just previous to death we may have a line of demarcation in the healthy tissue in the body, as in gangrene of the extremities, but this is a rare sequel in the pulp on account of the peculiar anatomy in the radicular part of the tooth, and because its apical entrance provides no way of egress or ingress. Cases do occur in which cicatrization has been seen both in so-called healed caries and in pulps in which punctures have been made intentionally for hyperemia, or accidentally (Figs. 7 and 14). I feel that as soon as we can secure aseptic or even antiseptic cavities, and tissues, especially in the dentinal tubules, and freedom from enamel fissures we may expect a greater number of pulp recoveries if the patient be in good general health.

As a termination by hyperplasia from a chronic pulpitis we need only note the so-called polypus of the pulp which has been ably studied by von Römer.[3] We all know the comparatively non-sensitive mass consisting of rather thick granular tissue in three layers, the outer having white blood or pus cells beginning to break down, the second the capillary vessel layer and endothelial cells almost like granulation tissue, and the third connective tissue with enlarged vessels and many round cells. He especially noted an entire absence of nerves or only a few nerve fibers. In the pulp cavity itself and in the canals numerous nerve bundles were seen degenerating. Such can be best seen in pulps which have been laid bare by fracture in attempts at extraction and in which the superficial pulp is cicatrizing. The differences between pulp hypertrophy and *pulpitis chronica hypertrophica granulomatosa* as quoted by Rothmund and Arkövy[4] may not exist, says Dr. von Römer. Certainly a growth which follows the type papilloma is usually different to the interstitial pulpitis or fibroid form by having a richer supply of blood vessels more dilated like an angioma and less fibrous tissue.

With regard to the other termination as a possible result of pulpitis, neoplasm or true tumor growth (Fig 15). I refer to my paper in which the literature and work has been discussed.[5] In order of frequency in a series of cases taken from the records of the Dental Hospital of Budapesth (Anton Kozma)[6] it was determined that acute periostitis is rarer than any other inflammatory disease, next maxillary affections, and then acute pulpitis, then follows chronic periostitis and, as borne out by my own histologic studies, chronic inflammation of the pulp, or, as I prefer to designate it, interstitial pulpitis. A peculiar circumstance is that the frequency of all inflammatory diseases in the upper jaw increases to the first molar and from thence decreases. The same order also occurs in the lower teeth. It may be said that in the first molar there is hardly any disease that one has not the opportunity of investigating.

If the teeth are considered individually, the inflammatory conditions in the upper premolars, incisors and cuspids occur more frequently than in the corresponding lower ones. But this is not so with the molars, the inferior of which suffer more than the superior, and this corresponds with the statements of Magitot and Kay, J. Tomes, S. Cartwright and Hitchcock.

In studying pulpitis there are specimens in which the most careful work by staining for bacteria does not show them to be present in the tissue of the pulp, more especially in the chronic or interstitial forms. Sections may show the dentinal tubes carrying some, and in others the pulp and odontoblast layers show them and also degenerative changes in the cells themselves. An interesting study could be made by examining sections of the pulp, especially stained to show the probable distribution of the micro-organisms, if they penetrate the basal layer of Weil and the probable routes of invasion into the pulp.

NERVE DEGENERATION.

Nerve degeneration so far has been little worked out in the pulp, but that it is present is evident. The degeneration of a severed nerve is well known in surgical practice, but it is not often remembered that simple contusion may have the same effect as severing the continuity of a nerve trunk. A contusion may abolish the function of a nerve for some hours, but if the function is not restored within a reasonably short time degeneration of the nerve may follow just as if it had been severely injured (Fig. 17). The peculiarity of nerve contusion is that it leads to neuritis and so may give what is really a pressure paralysis owing to the histologic structure.

As we know, a nerve trunk is made up of a number of bundles of nerves, each surrounded by a connective tissue sheath. This strong fibrous sheath plays an important rôle in the pathologic study of neuritis. The nerve has its own lymphatic, vascular supply and a special nerve supply to give it local sensibility. A contusion may, and in some cases does, set up a secondary neuritis, congestion, cloudy swelling, edema and distension of the nerve sheath which is an unyielding connective tissue, and if the inflammation is severe the compression of the nerve fibers gives us pressure paralysis and very soon the nerve degenerates. The symptoms may be obscured at the time of the pain and swelling. Micro-organisms may follow and infect the nerve fasciculi, as they usually arrange themselves along the blood vessel walls.

Whether the odontoblasts have a phagocytic function as suggested by Arkövy[7] is not proved yet. Figures 16 and 17, if compared, show degenerative changes in the ground work and very slight swelling at the nodes of Ranvier, some collection of the myelin substance, while Figure 12 shows a sclerosis, fatty degeneration and (Fig. 17) thickened fibers.[8]

3. von Römer: "Ueber Pulpapolypender Zahne." Correspondenzblatt für Zahnärtze, 1892, vol. xxxi, No. 1, Jan.
4. Scheff's Handbuch, vol. ii, p. 297.
5. Latham: "Neoplasm of the Pulp." The Journal A. M. A., Aug. 20, 1904.
6. Reported by Prof. Arkövy.
7. Arkövy: Jour. Brit. Dental Assoc., vol. xv, p. 602.
8. In addition to writers cited in the text, the following were consulted in the preparation of this article: Andrews, "Calcoglobulin," Dental Digest, December, 1904; Dental Cosmos, November, 1904. Talbott, "Vasomotor System of the Pulp," The Journal A. M. A., Dec. 9, 1905; "Constitutional Causes of Tooth Decay," Dental Digest, December, 1903; "Pulp Degeneration," The Journal A. M. A., Aug. 6, 1904, p. 385; "Endarteritis Obliterans and Arteriosclerosis in the Alveolar Process," Dental Digest, 1904; Scheff's "Handbuch," No. 2, p. 297; "Ein Beitrag zur Statistik der Zahn Caries," Inaug. Dissert., Kiel, 1886; Rothman, "Patho-Histologie der Zahnpulpa und Wurzelhaut," 1889; Wedl, "Atlas zur Pathologie der Zahne," p. 68, 1893.

The loss of control of the vascular system of the pulp and obstruction in the vessels followed by inflammation are probably factors in interstitial gingivitis which may be a cause of the gingivæ losing their normal function and so aiding in the progress of the disease (Fig. 17). The interference with the vascularity of the bone, the arteritis obliterans in the pulp and peridental membrane (Fig. 18) producing venous hyperemia of the gums, (acute or interstitial), changes in the mucous glandular structure and functions, and finally atrophy and osteomalacia.

DISCUSSION.

DR. M. I. SCHAMBERG, Philadelphia, said that for a long time dentists were prone to regard the pulp as merely a bundle of nerves. By the work of Dr. Latham we are made to believe forcibly that there are many pathologic conditions which are prevalent in other parts of the body and at the same time found to exist in the pulp. When he saw Dr. Latham's slides about a year ago he was much impressed with the fact that it would probably be best to remove all pulps which were even closely approximated by decay, if not entirely exposed. He was glad to hear Dr. Latham give evidence of the fact that some of these conditions might be alleviated or improved by the proper treatment, because the conservation of that organ prevents numerous complications which arise when we attempt to fill canals which are very minute and which are extremely important.

DR. E. S. TALBOT, Chicago, said that Dr. Latham held the opinion that it was difficult to say when a pulp is in a healthy condition, or to demonstrate a healthy pulp. It is a singular thing that in the evolution of a pulp from the lower vertebrates up to man, a general degeneration of the pulp occurs, and as we ascend from the lower vertebrates we find that the pulp gradually grows smaller and smaller, until in man the apical end of the root is almost entirely closed, so that we have a pulp mass consisting of blood vessels, nerves and connective tissue inside of the tooth. He believes that the pulp is at its highest physical development when it commences to form dentine. The mere fact of its growing smaller and smaller at that time would lead one to believe that degeneration was going on. Why we ever have a healthy pulp he did not understand. Dr. Latham had demonstrated almost every pathologic condition that is possible to be found in the human body. Ten years ago Ramón y Cajal of Madrid, Spain, found a stain by which he was able to show a nerve-end degeneration, and for the last eight or ten years the members of this Section have been using it along the line of research w rk. He, himself, had been studying the pulp for the last ten years with Dr. Latham, and some beautiful work had been done showing nerve-end degeneration in the pulp tissue. Arteriosclerosis, as well as fatty degeneration, had been noticed. The question naturally arises then, where so many primary diseases are found in the pulp, is it not better under most condit ns to extract or to remove the pulp and to fill the root of the tooth, rather than to try to cap and to preserve it.

DR. V. A. LATHAM added that one point was not made plain in regard to pain in teeth after pulp extraction. There are two photographs (Figures 5 and 6) which show the center pulp chamber being occluded by arteriosclerosis and beside that the amount of dentin forming around has practically obliterated the chamber. Six or eight exceedingly minute but distinct pulp canals are seen. This is a case in which one may extract the pulp and think the work is done, but on careful manipulation a condition will still be found to remain, and the patient will return day after day, saying: "Doctor, that tooth still hurts." Dr. Latham had another case in which the nerve, instead of going through the central chamber, actually came through the cemental surface into the peridental membrane. On passing a probe down at the side, pain was felt which nearly made the patient jump out of the chair. After extraction the nerve was found coming out at the lingual side of the tooth, to the gingival margin. It was not a case of hypersensitive cement or dentine as diagnosticated by several. The erratic position of the pulp and its terminal fibers is a matter of considerable importance to stomatologists and physicians in the matter of reflex disturbance.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN.

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AND
CHARLES H. FRAZIER, M.D.
PHILADELPHIA.

(*Concluded from page 853.*)

CASE 11.—Tumor of cerebellum.

History.—F., aged 16, was referred to Dr. Spiller, July 16, 1904, by Dr. J. S. Baer and Dr. R. G. Curtin. The father of the patient possibly had had syphilis. The menses ceased about two years ago; having begun when she was 14, they had, therefore, been present only a short time. For about one year she had had a severe sensation of pressure at the back

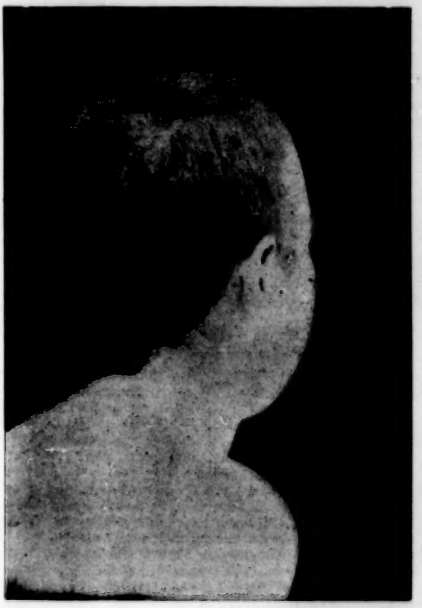

Fig. 4.—Showing a hernia cerebelli after a unilateral suboccipital craniectomy. The patient prior to the operation had been bedridden for over a year, is now able to be up and about and has been relieved almost entirely of her pressure symptoms (Case 11).

of the head, as though some one were pressing her brain out, but this sensation is not felt now. She has had headache, not localized to any one part of the head, and has had "neuralgia" in the left side of the forehead about a year. Before December, 1903, the headache was severe. About a year ago she began to have nausea and vomiting, at first about every six weeks, but these symptoms gradually became more frequent until they occurred every two or three days. The vomiting had no relation to eating. About a year ago she began to be dizzy, but has not been dizzy since February, 1904. Dr. Risley has recently discovered optic atrophy, secondary to choked discs. She has never been unconscious. She has had difficulty in lying on her right side, but this sign seems to have disappeared. Lying on the right side caused her head "to kind of draw." She has never had convulsions. Sight has been fail-

ing about two years. Difficulty in walking was noticed about November, 1903; she staggered, and the staggering seemed to be more to the left.

Present condition, July 16, 1904: There is no involvement of either seventh nerve masseter contracts well on each side, tongue protrudes straight, not atrophied and shows no fibrillary tremors. Movements of eyeballs are free in all directions, but distinct nystagmus is observed in turning the eyes far to the left or right, and probably is more intense in turning the eyes to the right. The right pupil may be a trifle larger than the left. The reaction of the pupil to light is preserved, also in convergence. Accommodation can not be tested because of poor sight. She can count fingers with either eye, but the sight is more impaired in the left eye. She hears a low-ticking watch one or two feet from either ear, and has not noticed any deafness. She has had buzzing in both ears, especially in the left, but Dr. Baer states that she has had accumulations of wax in the ears. The face is somewhat puffy and expressionless. The exit points of both fifth nerves are sensitive, but the left supraorbital foramen is more sensitive than the right. She now holds her head straight, but says she formerly inclined her head to the left. Sensations of touch and pain are normal in each side of the face.

Upper Limbs: All the movements are free; the grasp of each hand is normal. The biceps and triceps reflexes are not distinct on either side. Sensations of touch and pain are normal in each upper limb. The finger-to-nose test with eyes closed does not show distinct ataxia.

Lower Limbs: Voluntary power is normal. The patellar reflex may be a little prompter than normal on each side. She staggers a little when standing erect with eyes closed, and the gait is uncertain, with a tendency to stagger more to the left. The gait is cerebellar in type, but the staggering is not intense. The Achilles jerk is not distinct on either side, nor is the Babinski reflex. Sensations of touch and pain are normal in the lower limbs.

Fig. 5.—Fibroma removed at operation (Case 12). The patient lived five days after this operation.

Dr. W. H. Powell first examined the eyes in November, 1903. Vision of the right eye, 20/50; of the left eye, 20/50. Pupils react to light and accommodation. Peripheral vision normal, media clear, but fundus suggests a low grade of neuritis. In July, 1904, vision of the right eye was 20/100, of left eye 4/200, and she had optic atrophy and markedly contracted fields.

Chiefly because of the history of probable syphilis in the father I employed mercury and iodid, and by Aug. 16, 1904, her gait had become less ataxic. By May 5, 1905, headache had disappeared, but about once a month she still had a drawing sensation, as though the brain were being pulled out. Ataxia was slight. The patellar reflexes were about normal.

Feb. 22, 1906, Dr. de Schweinitz found typical postpapillitic atrophy.

Operation.—March 9, 1906, suboccipital craniectomy was performed by Dr. Frazier under ether anesthesia. The operation consisted in removing that portion of the occipital bone overlying the left cerebellar hemisphere.

Subsequent History.—March 28, 1906: Since the operation was performed the condition of the patient has improved, but only to a moderate degree. The pain referred to the arms has been very much less severe and at times she has had none at all. Her headaches also have been less severe and less frequent. Although confined to bed for the past year, she is now able to get up in a wheel chair. Although the dura was neither incised nor removed at the operation, there is quite marked bulging over the left cerebellar hemisphere, showing that the dura has yielded to the pressure from within and that it is possible for a hernia to develop without opening the dura.

Second Operation.—April 4, 1906: After consultation with

Fig. 6.—Brain from Case 12, showing portion of tumor in right cerebello-pontile angle not removed at the operation.

Dr. Spiller it was decided that, owing to the fact that the headache and pain in the arms had not been entirely relieved, it would be advisable and afford greater relief to the increased

Fig. 7.—Tumor, probably a fibroma, of the left cerebello-pontile angle (Case 14).

tension to split the dura. Following an injection of 1-6 gr. of morphin, and under ether anesthesia, the left cerebellar hemisphere was exposed by a muscle-splitting operation. A

vertical incision was made through the middle of the original flap, the edges of the wound retracted and a crucial incision made in the dura about 1½ inches in either direction. The cerebellar tissue bulged considerably through the opening, but the exposed tissue was normal in appearance. The musculo-aponeurotic layers of the wound were closed with catgut sutures and the scalp with interrupted silkworm gut sutures.

April 16, 1906: The following notes were made by Dr. Spiller: The paralysis in the lower distribution of the right facial nerve supply is distinct, although the upper distribution of the nerve does not seem to be affected. She has light weakness of the right upper and lower limbs. The patellar reflex is prompt on each side, but more prompt on the right, and there is slight tendency to ankle clonus on the right side. The Babinski sign is present on the right side, but uncertain on the left side. There is no disturbance of sensation for touch or pain in any part of the body.

May 23: For the first few weeks after the second operation the patient had occasional headaches and pain in the upper extremities. For the past two weeks, however, she has been almost entirely free from both these symptoms. She has gained in strength and is able to be up a considerable portion of the day. A hernia cerebelli has increased somewhat since the second operation (Fig. 4). She has recovered sufficiently from the effects of the operation and is sufficiently relieved to warrant her being discharged from the hospital. Her gait is still ataxic. She menstruated in May, 1906, the first time within a period of four years.

Case 12.—Cerebellopontile tumor. Decompressive operation, followed by disappearance of headache, vomiting, and by subsidence of choked disc.

History.—E. D., aged 24, was referred to Dr. Frazier by Dr. Sherman Voorhees, of Elmira, N. Y. She was seen in consultation also by Dr. Spiller. About two years ago the patient noticed that her limbs were weak, that she would stagger in walking, although she did not feel dizzy. About one year ago she began to notice that her vision was failing. At this time she would have attacks, when for a few minutes everything before her would seem black; following the attacks she could see perfectly well again. At the same time she began to have attacks of nausea and vomiting, and noticed that she was becoming slightly deaf in her right ear. For the past three months she has had considerable headache, sometimes dull, at others sharp and shooting in character. At the time of her admission, Feb. 16, 1905, she is practically blind and unable to walk.

Examination.—February 17: It was noticed that in showing her teeth the right corner of the mouth is not drawn up nearly so well as the left, and in drawing up each corner separately the movements on the right side are distinctly less than the left. On closing her eyelids forcibly the resistance to passive movements is less on the left side than on the right side; the masseter muscle seems to contract equally well on one side as on the other. The ocular movements are normal and there is no distinct nystagmus. There is no disturbance of pain and tactile sensation in the face, although she complains of a "queer" feeling on the right side of the face and right side of the mouth and of the face feeling numb, as though it were asleep. Further examination gives the impression that both the left temporal and masseter muscles contract a little more than the right, although it was subsequently found that on both sides the muscles respond equally well to Faradic current. The tongue is protruded straight and there are no fibrillary tremors. The right eyelid seems to be slightly more prominent than the left.

In the upper extremities the grasp of each hand is normal. Biceps reflex is normal on each side; the triceps reflex and wrist reflexes are not distinct on either side. Sensations for touch and pain are normal on both sides. There is slight ataxia on each side, a little more on the right.

In the lower extremities the patellar reflex is a little prompter than normal on both sides. There is no ankle clonus. The Babinski sign is uncertain in each side, as she resents any attempt to irritate the sole of the foot. The Achilles jerk is absent on both sides; there is no hemiasynergy and no weakness of any of the limbs; gait is slightly ataxic, specially noticeable when she turns; in walking the patient staggers more to the left than to the right. She staggers when her feet are together almost as much when her eyes are open as when they are closed.

Examination of Ear: Dr. Randall finds little hearing in the right ear by air or bone, except for the Galton whistle. Tests are slightly contradictory, but indicate middle ear trouble on the right side, complicating semi-complete right acoustic paresis. Hearing on the left side is not impaired.

Ophthalmic Examination by Dr. Shumway: Pupils are dilated; right pupil responds when light is thrown in from the temporal side, in which position it is recognized. The left pupil does not respond to light and the eye is blind. There is choked disc on both sides; elevation on the right side is about 6 D. and on the left 7 D. The nerves are beginning to atrophy. The eye movements are carried out in a jerky manner, the muscles acting feebly, and the eyeballs return to primary position immediately. There is no paralysis of the ocular muscles.

Operation.—February 23: Under ether anesthesia Dr. Frazier performed a suboccipital craniectomy, removing the bone overlying the right cerebellar hemisphere. Owing to the fact that bleeding was so profuse, it was decided to discontinue the operation at this stage until the patient had fully recovered from its effects.

A radical operation was performed two months later and was followed by death within five days (Figs. 5 and 6). After the decompressive operation the choked disc subsided from 7 D. to 3 D., although, unfortunately, the optic atrophy was so advanced that it precluded the possibility of restoring the vision. The hearing improved somewhat after the operation and the nausea and vomiting ceased. Headaches disappeared almost entirely and the patient was able to get up and walk about the ward with but little assistance.

Case 13.—Inoperable tumor of brain. Decompressive operation, followed by little or no amelioration of the symptoms, although prolonging the patient's life.

Patient.—R. C., aged 30, was referred to Dr. Charles H. Frazier by Drs. Thomas O. Nock and Wharton Sinkler, March 15, 1906, the latter having seen the case in consultation.

History.—There was a history of the patient having had an attack of vertigo while walking about three months ago, and had she not been caught by her husband she would have fallen to the ground. At the same time she had some numbness in the left upper and lower limbs. Since that time she has had two attacks of numbness of the limbs, but no vertigo. She has had more or less persistent headache for the past year, occurring about three or four times a week, usually in the mornings. There have been no convulsions. Three weeks ago the symptoms became much more severe, headache more intense and numbness in the left extremities more marked. At this time it was noticed that the muscles of the left side of the face were gradually becoming weak, the muscles becoming paralyzed within a period of from four to five days. Up to this time there was no weakness in the extremities, but about a week after the involvement of the facial muscles was noticed the grasp of the left hand became weak, and about the same time weakness was noticed in the left lower limb. The upper extremity sometimes is flaccid, at other times spastic, but the lower extremity has never been spastic. The pulse has varied between 44 and 60. The respirations have been alternately shallow and moderately full, the respiratory rate ranging from 16 to 30 a minute. For the past four or five days her temperature has been subnormal. About eight days ago for the first time the patient became stuporous for variable periods of time. These periods of stupor have gradually increased, and during the past two days the patient has been almost comatose. This condition of mental hebetude was first noticed about two weeks ago.

Examination.—March 15, 1906, by Drs. Nock, Sinkler, Frazier and Spiller: Stupor is so great that the patient can be roused but slightly. She lies in bed with her head turned to the right, but there is no deviation of the eyeballs. There is no tenderness on percussion of the scalp. She is able to move the eyeballs well to the right, although there may be slight impairment of the left eyeball to the right, but probably not

of the right eyeball to the left. The right pupil is larger than the left. Neither pupil reacts to light. It is impossible to tell whether there is any deviation of the tongue or to test the muscles of mastication.

Left Upper Extremity: The left extremity is very weak, although she has a little voluntary power in it and can flex the limb feebly at the elbow. She can not make a fist with the left hand. The biceps tendon and triceps tendon reflexes are present, but weak. Sensation is not disturbed.

Left Lower Extremity: The lower extremity is very weak, although she can move it slightly. The patellar reflex is present on the left side, but not very prompt. The Achilles tendon reflex is present on each side and about normal. There is no ankle clonus and the Babinski sign is very typical on the left side, as it is on the right, although not so pronounced. Pin prick is perceived in the left lower limb.

Examination of the Blood: Systolic pressure, 165; hemoglobin, 65 per cent.; white blood corpuscles, 21,240.

Urinalysis: There is slight albuminuria, no sugar and a few granular casts.

Ophthalmic Record by Dr. de Schweinitz: This examination was made a week or more before the patient came to the hospital and disclosed a moderate optic neuritis of each eye, most marked on the right side. There are also a few hemorrhages in the neighborhood of the optic disc. The neuritis appears to be in an early stage of its development; on the left side it is just beginning. The pupil reacts normally. There appears to be a divergent strabismus, usually more marked on the right side and probably dependent on paresis of the right internal rectus. Some examinations appear to indicate that there was failure in the movement of the eyeball upward, therefore some involvement of the right superior rectus. This was not certainly determined, as there did not appear to be much difference between the two sides; both lids droop to about an equal extent, but the droop is one probably due to weakness and not to paresis. The visual field, roughly taken by the hand, appeared to be undivided; at least there was no hemianopsia.

Operation.—March 15, 1906: The date the patient was admitted to the hospital an osteoplastic operation was performed, in which the motor region was exposed. It was noticed when the flap was reflected that there was some bulging of the dura at the lower and posterior angle of the opening. An exploratory incision about 1½ inches long was made at this point, at which the dura seemed very much thinner, as though undergoing atrophy from pressure. The brain contents bulged through the opening thus made, and an exploratory canula was introduced for about 1½ inches, as there was some reason for suspecting the presence of an abscess. It seemed as though the canula entered a cavity; at first some brownish fluid flowed from the canula and afterward pure blood. The exploratory incision was made about one-half inch behind the anterior margin of the opening and a small section of tissue removed for examination. Concluding the lesion was a subcortical one, we decided to discontinue any further exploration. A considerable portion of the bone in the flap was removed and the dural incisions and the incisions in the scalp closed.

From the date of the operation until the time the patient left the hospital, ten days later, the patient manifested but little, if any, improvement as a result of the operation. There were times when she seemed to be a good deal brighter than she had been in the immediate past, and also times when she had a little more movement in the left upper extremity. Mental condition, on the whole, was better, but apart from this there was very little, if any, change. It might be noted that the leucocytosis which existed before the operation continued afterward, and at one time the white-blood corpuscles numbered 36,000. In a differential count that was made March 25, 1906, there were 94 per cent. of polymorphonuclear cells. The persistent leucocytosis in the absence of any wound infection was strongly suggestive of the presence of an abscess.

Postoperative History.—May 24, 1906: A letter recently received from the patient's physician, Dr. Nock, says that her present condition is about the same. There is complete paralysis in the left upper and lower extremities, and now gradual weakening of the muscular power in the right arm and leg. When awake the patient talks intelligently and is interested in what is going on, although there is a tendency toward confusion of ideas at times. Her appetite is good and she takes enough food to maintain her nutrition. Her temperature varies from 99 to 99.3. Pulse is regular.

We include the following case, which was in the service of Dr. Mills and Dr. Martin and was studied also by us:

CASE 14.—Stafford, male, aged 46, was under the care of Dr. C. K. Mills in the University Hospital in 1902. He was seen also by Dr. Potts and Dr. Spiller.

The patellar reflexes and Achilles tendon reflexes were lost; the gait was ataxic. Headache, dizziness, optic neuritis, nystagmus and paresthesia of the left side of the face were present among other symptoms. The diagnosis of cerebellar tumor was made. A palliative operation over the cerebellum was performed by Dr. Edward Martin in 1902. The patient's condition was much improved. He died in 1906 and a tumor was found in the left cerebellopontile angle (Fig. 7).

THE PRESENT STATUS OF BRAIN SURGERY.*

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It is twenty years since the first operations on the brain for the relief of tumors, epilepsy, and abscess were undertaken, and the data for final conclusions in regard to the propriety of such operations in various conditions are now available.

The enthusiasm with which these operations were performed at the outset has subsided and it is now possible to take a broader and calmer view of the entire subject; to realize the limitations of such operations; to appreciate their true value and to determine with considerable exactness the class of cases in which brain surgery promises success.

In this review I shall endeavor to present conclusions derived from an extensive experience in this field, and when statistics are cited too great stress will not be laid on them, as I realize that very many cases, both of a favorable and unfavorable kind, have not been published. I shall take up in succession the surgical treatment of epilepsy, of brain abscess, of brain tumor, of cerebral hemorrhage, and of operations for the relief of imbecility and idiocy.

I. SURGICAL TREATMENT OF EPILEPSY.

The cases of epilepsy which are open to surgical treatment are those in which it can be determined that there is a localized focus of disease in the brain, which acts as a starting point for irritation, and thus causes the epileptic attack. Such a local focus of irritation may be caused by an injury to the head, in some cases producing fracture of the skull, but in many cases not attended by external evidences of injury. It may also be produced by internal causes, such as the growth of small local inflammation of the meninges. A plaque of sclerosis in the brain, the origin of which may be wholly unknown, is capable of producing epilepsy and our experience in the treatment of abscess and tumor has shown that the necessary cutting of the brain for the relief of these diseases is liable to result in the production of gliomatous scar tissue which subsequently becomes a focus of irritation leading to epileptic attacks.

The essential difference between epilepsy produced by

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these local lesions and idiopathic epilepsy consists in the fact that in the cases open to operation the epileptic fit is uniformly preceded by a single kind of aura, either a sensation of numbness in one extremity, or an hallucination of sight, sound, smell, or taste, or by a sensation of muscular twitching, which is immediately followed by a localized spasm confined at first to one extremity, or to one side of the face, and extending (if it does extend) in a definite manner to the other parts of the body. The fit is rarely attended by a loss of consciousness. Such a localized epilepsy, generally recognized as Jacksonian epilepsy, is always due to a definite focus of disease in the brain. Furthermore, this disease is cortical, and hence accessible to the surgeon, and by following the well known guides to localization such diseases can be excised either from the meninges or from the cortex when these parts are laid bare.

It must be distinctly stated that these are the only cases of epilepsy which are open to a cerebral operation. Epilepsy is a widespread disease among the community, one person in five hundred being affected. In my experience not more than 2 per cent. of the cases of epilepsy are in any way open to operation, the other 98 per cent. presenting none of the characteristic symptoms of localized disease in the brain. It is useless to trephine in idiopathic epilepsy, even though it may have been apparently caused by a fall or blow on the head, unless the attacks present the characteristics here named.

The prognosis in the cases of focal epilepsy open to operation is not so favorable as was at first anticipated. Even when a focus of disease can be excised from the brain, a cyst removed, or a plaque of adherent meninges loosened and taken away, some cicatrix is inevitably left, and this too often remains as an adequate focus for the recurrence of the epilepsy. In only about 20 per cent. of the patients operated on has permanent cure been the terminal result. In very many cases relief for a certain time has followed the operation, but after one, two, or three years these patients have returned with a renewal of the symptoms, and second and third operations have not been followed by permanent cure. Such unfavorable results might possibly lead to the conclusion that in the majority of these cases of focal epilepsy an operation should be refused. As a matter of fact, however, it is often found that the focal epilepsy is the first symptom of the growth of a tumor, or the development of a cyst in the cortex of the brain. And if the histories of cases of brain tumor are carefully studied it is surprising to see in how many cases focal epilepsy was the earliest sign of the development of this disease. It seems imperative, therefore, to operate in these cases of focal epilepsy as soon as the diagnosis is made: First, because of the possible relief of epilepsy, and, secondly, for the possible discovery of a more serious and fatal disease just beginning.

I have had operations performed for the relief of epilepsy of a focal nature in about 60 cases. In a few of these cases conditions have been met at the operation which rendered any relief impossible. In a few of the cases (about one-fifth), a permanent cure has been obtained. In the remainder the epilepsy has returned and has been in no way affected by the operation. I have seen many cases of ordinary idiopathic epilepsy, supposed to be due to a blow on the head, operated on, the blow having left some scar that has guided the surgeon. I have never seen in these cases any tangible disease in the brain when it was exposed, and I have never seen any improvement or relief from the epileptic attacks.

A review of this experience convinces me that the operation of trephining in epilepsy is of very limited application and is only to be recommended in a few selected cases which present the necessary guide to both physician and surgeon.

CASE 1.—This is a good example of Jacksonian epilepsy in which the finding at the operation justified surgical treatment.

Patient.—A boy, aged 10, began to suffer from attacks consisting of tingling and numbness beginning in the right wrist and passing up the arm, invading the right side of the face. He then felt unable to speak, would feel weak in the arm and drop anything he was holding, and occasionally he would have some twitching of the entire arm. He did not lose consciousness and the entire attack was over within five minutes. Such attacks continued at frequent intervals until the age of 23, when at my suggestion an operation was undertaken by Dr. Hartley.

Operation.—On exposure of the brain a firm adhesion between the dura, pia and cortex about the junction of the middle and lower third of the anterior central convolution was found, and as the brain at this region was manifestly hard after the membrane had been stripped off a portion of the cortex, ½x⅝ in. in size was cut out. The Faradic current was applied to the cortex in this region and produced movements of the wrist, elbow and shoulder, and above the shoulder area it caused movements of flexion of the trunk and back towards the right side; this being a complete confirmation of Sherrington's localization of the trunk centers at the junction of the middle and upper thirds of the anterior central convolution in the orang. It was evident in this case that the localized sclerosis of the cortex and adhesion of the meninges to it, probably the result of some unrecorded fall in childhood, had for many years existed as a cause for the Jacksonian epilepsy, and it was also evident that nothing but an operation would have given radical relief. I had recommended the operation when the boy was 11 years old, but it took twelve years of useless medical treatment to convince the parents of its necessity.

II. THE SURGICAL TREATMENT OF ABSCESS OF THE BRAIN.

Abscesses of the brain of traumatic origin, following injuries or fracture of the skull when located in parts of the brain, diseases of which produce definite cerebral symptoms, can usually be diagnosticated without much difficulty, and should be operated on early. In cases of fractures of the skull or concussion of the head, followed within two or three weeks by the development of symptoms suggestive of abscess, it is imperative to trephine even though the indications are purely those of a surgical kind, there being no localized cerebral symptoms, for there are many districts in the brain, disease of which does not produce known effects. Patients with abscess of the brain developing subsequently to chronic otitis media, should be operated on as early as it is possible to make the diagnosis.

The diagnosis of abscess of the brain is comparatively simple in cases in which the usual causes have preceded the development of cerebral symptoms. Headache, vertigo, vomiting, slow pulse, marked change in the mental state, sensations of dullness and hebetude, slowness of thought, irritability of temper, defective memory and depression, tenderness of the head to percussion, irregular pupils and optic neuritis, constitute sufficient evidence of a cerebral complication. When meningitis occurs, as a rule, lumbar puncture will reveal an increased number of leucocytes in the cerebral spinal fluid, and the existence of micro-organisms in that fluid. Lumbar puncture, therefore, is an important means of differential diagnosis between meningitis and cerebral abscess. Examination of the blood is also a means of diagnosis, for a sudden and great increase in the leucocytes is an indication of a cerebral complication, and the leucocyte

count in meningitis is usually higher than that in abscess. As soon as the diagnosis of a cerebral abscess is made, under any circumtances it is imperative to operate. And while the percentage of recoveries from the nature of the case is at present only about 60 per cent. in statistics I have collected[1] covering about 500 cases, yet there is every reason to believe that in cases that are diagnosticated early and the operation is undertaken as soon as the diagnosis is made, the percentage of recoveries will be much greater.

III. THE SURGICAL TREATMENT OF TUMORS OF THE BRAIN.

The diagnosis of brain tumor is usually easy from the combined presence of headache, worse on waking, vomiting of a projectile type, not connected with the taking of food, and worse on waking, vertigo developing on change of position, optic neuritis and mental dullness. When to these symptoms there are added either Jacksonian epilepsy, paralysis at first limited to one limb and extending to other parts, some form of aphasia, hemianopsia, astereognosis, cerebellar staggering and sudden loss of balancing power, or the combination of cranial nerve symptoms due to involvement of the tissues on the base of the brain, the diagnosis of the position of the tumor is reasonably certain. In these cases operative interference may be warranted. In the far larger number of cases in which localizing signs are absent operation promises nothing.

A careful review of a large number of cases of brain tumor, examined postmortem, shows that about 10 per cent. of tumors are open to surgical treatment. The most recent statistics of results in such cases have been published by Dr. Philip Coombes Knapp,[2] whose tables I reproduce, as they are most instructive. Of 828 tumors operated on up to July, 1905, it was found that in 471 cases the tumor was found and removed; in 189 cases the tumor was not found, in 104 cases the operation was a palliative one only, and in 64 cases the tumor, though found, could not be safely removed. Further analysis of the cases, 471 in number, in which the tumor was removed, shows that the diagnosis was correct, the removal easy, and the recovery or improvement most satisfactory in those cases in which the tumor lay near the Rolandic or Sylvian fissures, while the mortality was greatest in the cerebellar cases.

RESULTS IN OPERATIONS FOR TUMORS OF THE BRAIN.

	Recovered.	Improved.	Not improved.	Died.	Result not stated.	Total.
Removed	112	122	78	123	36	471
Not found	4	24	61	87	13	189
Impossible	0	11	11	40	2	64
Palliative	0	48	36	15	5	104
Total.	116	205	186	265	56	828
Frontal	15	6	3	8	2	34
Central	52	82	43	54	5	236
Parietal	7	5	5	12	0	29
Temp.	2	4	6	5	1	18
Occip.	3	3	2	2	1	11
Cerebellum	7	16	8	23	1	55
Not stated	26	6	11	19	26	88

These statistics are quite in accord with my own experience. It is evident then that out of 100 brain tumors we may expect success in surgical treatment in but five only. Yet there is no doubt that even if the number of lives saved is small it is our duty to study every case with our minds fixed on the question of possible surgical relief.

It has been proposed by Horsley and recently urged by Cushing, that in inaccessible tumors some relief of symptoms may be attained by making a large opening in the skull for the relief of pressure. In one of my patients recently operated on by Cushing the removal of two portions of bone over both lobes of the cerebellum, has apparently cured the child, the blindness has subsided, the headaches have ceased, and although he staggers some still in walking, he lives in comfort and is able to go to school, while at the time of operation in July, 1905, he was at the point of death. Such cases encourage one to believe that palliative operations are justifiable. It is only right to state that I have seen two other cases in which they did not succeed.

Case 2.—This case shows the importance of early operation in brain tumor.

***Patient.*—In January, 1905, a healthy business man began to suffer from severe frontal headaches, sometimes attended by vomiting, and it was soon noticed that he misplaced words and had difficulty in expressing his ideas. These symptoms increased steadily during February, and early in March he had a temporary attack of right hemiplegia and aphasia, which, however, passed off entirely in two days, but left his speech more defective. This was followed by recurring attacks of twitching in the right hand and in the right side of the face, attended and followed by numbness in these parts. By the middle of March his speech defect had become constant and he could no longer write, though he could read; and he had become very dull and drowsy.**

***Examination.*—On March 25 he went into a semi-stuporous state in which I first saw him. I found an extreme choked disc in both eyes, worse in the left; no paralysis, but a flatness of the right side of the face and increased reflexes in the right limbs. I concurred in the diagnosis of brain tumor made by his physician, Dr. Rutz, and located the tumor in the left third frontal convolution, and recommended operation.**

***Operation.*—On March 27 Dr. Hartley operated, making a large bony flap over the left ear four inches in diameter. When the dura was opened the tumor was visible, lying in the middle of the third frontal convolution. It was easily shelled out by a spoon, and some small discolored parts of the white matter of the brain about it were also taken out, leaving a clean cavity.**

His recovery was rapid. The day after the operation he was still speechless, but within a week he had regained his speech, could read aloud, and could write, and had no paralysis. On April 16 he was up and the wound had healed. On May 16 he went back to business in apparently good health. In November, 1905, he had had no return of brain symptoms.

IV. SURGICAL TREATMENT OF CEREBRAL HEMORRHAGE.

In cases of extradural hemorrhage following contusions or fracture of the skull the slow development of symptoms of intracranial pressure, slow pulse, steady rise in the blood pressure, deepening coma, Cheyne-Stokes respiration, and increasing hemiplegia, afford sufficiently clear indications for trephining. The symptoms develop within six hours of the injury. It is usually from the middle meningeal artery that the hemorrhage occurs; hence it is the area just above the ear which is to be exposed, a large trephine opening or a large bony flap being made. All surgeons of experience have treated such cases successfully, and the literature is full of reports of clots removed, with recovery.

It requires much courage to suggest an operation in the head in a patient who is comatose from an apoplexy. A considerable number of these patients recover, at least in part, when left alone, and the depth of the coma, or the degree of the paralysis affords no indication during the first twenty-four hours, of the eventual result. It is due to Harvey Cushing to state that he has applied successfully in hospital cases the test of the condition of the pulse tension in determining the need of surgical intervention to prevent death. When the blood pressure

1. N. Y. Med. Rec., March 10, 1906.
2. Knapp: Boston Med. and Surg. Jour., Feb. 1, 1906.

rises steadily to 250 mm., measured on the Riva Rocci apparatus, in a case of apoplexy, and coincidently with this rise there is a slow pulse falling to 50 a minute, we may say that the case will be fatal. It is in such a case that we are justified in resorting to surgery.[3] The object in view is to relieve the intracranial pressure. This is to be done by turning down a large bony flap or making a large fenestrum in the skull, irrespective of any attempt to find or to remove the clot. The best place to open is over the motor area on the side opposite to the paralysis, for in some cases the clot may be found there. The dura is to be exposed and divided. If the clot is on the surface it will then be seen. If the clot is within the brain the brain will bulge and division in the depth of a fissure may succeed in reaching and evacuating the clot. Even if the clot is not found and removed the relief of the intracranial pressure stops the alarming symptoms and recovery is much hastened, as Cushing's cases have proved. The pulse tension falls as soon as the skull is opened. The pulse becomes more rapid, Cheyne-Stokes respiration ceases, and consciousness soon returns. The operation thus saves life in a formerly hopeless condition.

There is another class of cases of cerebral hemorrhage in which Cushing has also operated successfully. A certain number of infants are born in a state of asphyxiation, and it is evident that the delayed or difficult labor has caused not only a large caput succedaneum, but an intracranial hemorrhage, either extradural or intradural. Lumbar puncture usually shows a bloody cerebrospinal fluid in these cases. These infants usually die, or if they live they will remain hemiplegic, idiotic, or epileptic all their lives, a burden to their families or to the community. Any measure for their relief is justifiable. It is comparatively easy in a newborn infant to expose the brain by opening the sutures of the parietal bone with scissors. This operation has been done in asphyxiated paralyzed infants, when the ordinary methods of resuscitation have been applied in vain; large clots, both extradural and intradural, have been found and removed, and recovery has followed. The child's life is saved and the brain in its gradual development throws off the effects of the temporary pressure.[4] It seems true that the success of Cushing in these cases warrants us in urging on obstetricians their duty to consider this operation in asphyxiated infants. It is they who see these cases, and if they can be persuaded that delay in them is dangerous, and the prospect of relief is good, the percentage of idiocy and hemiplegic epilepsy will surely be reduced.

The last class of cases of cerebral hemorrhage open to trephining is the class in which the hemiplegia or aphasia or hemianopsia develops slowly after an injury and does not come to its height for three or four days. In these cases it is probable that a surface hemorrhage has been due to the injury of a vein of the pia mater. A lumbar puncture will reveal bloody cerebrospinal fluid. The symptoms may increase and threaten life, as shown by the slow pulse, Cheyne-Stokes respiration, and increasing blood pressure, or they may come to a standstill, leaving the patient permanently incapacitated. In either case surgical treatment is indicated. I believe the case reported by Dr. McBurney and myself in 1889,[5] of the successful removal of a clot from the lower third of the fissure of Rolando, was one of the first of this character. The man was a physician who was thrown from his buggy, and in the course of three days after developed a motor aphasia and right hemiplegia. The operation was done four months after the injury. The clot was found semifluid and organized, and was easily taken out. His recovery was progressive, and he eventually returned to his practice, though he remained slightly hemiplegic until his death in 1897. I could cite many other cases equally successful.

3. Amer. Jour. Med. Sci., 1903, p. 1017.
4. Amer. Jour. Med. Sci., 1903, p. 543.
5. "Brain Surgery," Case 18, Wm. Wood & Co., 1893.

V. SURGICAL TREATMENT OF IMBECILITY.

It will be remembered that much interest was excited as far back as 1891 by some results reported by Lannelongue in which he had attempted to cure imbecility due to microcephalus by making large exsections in the skull and thus allowing for an increased expansion of the brain. A wide segment of bone was cut from the frontal through the parietal to the occipital region on both sides, and in some cases the parietal bones were pried out a little, thus giving ample space for the brain to grow. Lannelongue reported these cases from the surgical standpoint as recoveries, intending to imply that the children had survived the operation. It was mistakenly supposed that he had implied an improvement or recovery from the condition of imbecility, and hence his operation was repeated by many surgeons in many lands—Dr. Keen in this country and Dr. McBurney and I having done a number of such operations. The subsequent histories of these cases, however, has demonstrated conclusively that no marked mental improvement ever follows this operation. It is evident that the microcephalus is not the cause of the imbecility, but that the imperfect and rudimentary development of the brain, which does not grow in proportion to the rest of the body, prevents the normal expansion of the skull over a normally growing brain and leads to an early closure of the fontanelles, though, as is well known, such a closure in no way affects the growth of the size of the head in a normal infant, granting that the brain within it be normal. All imbeciles improve gradually under proper instruction as they grow older. In some cases they even develop rudimentary speech spontaneously, hence the slight improvement which in some cases has appeared to follow the operation in no way differs from a corresponding improvement in patients equally affected but equally trained, who have not been operated on.[6] For this reason I no longer recommend any operation on the head in cases of idiocy, imbecility, hemiplegia and epilepsy dating from childhood, and it may be stated incidentally that these operations have no effect whatever on the painful condition so often associated with these conditions, namely, athetosis.

I may record one case in particular in which a hemiplegic child with very extreme athetoid movements in the paralyzed limbs was operated on by Dr. McCosh at my suggestion, and a thick organized clot, more of the nature of a thin connective tissue membrane was stripped off from the motor-centers of the arm and leg without any subsequent benefit either to the hemiplegia or to the athetosis. In two other cases of the same nature in which operation was performed, a peculiar connective tissue structure was found occupying the motor zone of the cortex, which resembled in appearance honeycomb, the interstices being filled with serum. The removal of this structure which was regarded as the terminal organized relic of an early hemorrhage, produced absolutely no permanent cure in the child's condition.

6. Marten Marten's recent novel: "The Healers," has added interest in this subject.

DISCUSSION

ON PAPERS OF DRS. SPILLER AND FRAZIER AND STARR.

DR. CHARLES K. MILLS, Philadelphia, said he was so firmly impressed with the importance of palliative operations, both from the standpoint of the neurologic observer and from that of the neurologist personally interested in what the surgeon is doing in a case of his own, that he believes that in every case of brain tumor operation should be performed, provided the case is operated on at the right time, and provided also that the surgeon does not do too much. In the case of a tumor the operation should always be for removal, if it is possible to localize the tumor, or to say with any certainty that the tumor is of a size and in a position that will allow of its removal. If removal can not be accomplished palliation will result if the surgeon stops his hand at the proper time. In some cases the surgeon should not even make a dural flap; in some cases he should, for the purpose of exploration. If a tumor is not present in the opening he should, as a rule, stop with the dural flap, and not make any subcortical exploration. Dr. Mills held that subcortical exploration should be made only when there is at least some actual evidence that a tumor may be present below and not far from the surface.

Concerning palliative operations and medicinal treatment, he believed that in the vast majority of cases better results will be obtained if operation, either radical or palliative, is resorted to without waiting too long for the effects of treatment with mercury and iodids. In many cases it is better to do the operation and then to continue the medication. Operation is frequently postponed too long. This is probably because of several reasons. In the first place because the diagnosis is not made with certainty soon enough; secondly, because of the lack of support of those who are too conservative, both in the profession and among the laity; and, thirdly, because of the idea which is prevalent, that in every case of cerebral neoplasm, especially if there seems to be any evidence that syphilis is present, the patient is given iodid or mercury indefinitely. He recalled case after case, some included in the paper of Drs. Spiller and Frazier, in which relief occurred after palliative operations. The relief obtained in cases of optic neuritis is particularly noticeable.

Dr. Mills would not go as far as Dr. Starr in saying that in almost every case of Jacksonian epilepsy the lesion was probably a focal one, and in almost every case of that kind operation should be performed. There is need of studying with the greatest care every case of Jacksonian epilepsy. In a paper in the *Boston Medical and Surgical Journal*, Dr. Mills said, he went fully into the subject and showed any number of cases of Jacksonian epilepsy that were not due to tumors, and many not to other focal lesions.

Dr. Mills believes that there should be operation in every case of brain tumor of which the diagnosis is fairly sure. He thought the percentage of cures should be placed a little higher than that given by Drs. Walton and Paul. It should be more than five and perhaps a little less than ten per cent. The conclusions drawn there were from autopsy results.

The greatest accuracy and the greatest care should be taken in the craniometrical preparation of the case for operation. He said this because he has heard surgeons practically argue in favor of a rule of thumb procedure. Even with the great care taken at the University Hospital the best opening possible is sometimes not made.

He agreed with Dr. Starr that dural hemorrhages should be operated on when encountered. The operation should not be performed immediately, nor should it be delayed too long.

With reference to hemorrhages at birth, he had never seen an operation for hemorrhage at birth, but has held several postmortem examinations on children who died immediately after birth; two cases in one family showed diffused destruction of the cerebral substance, indicating that successful operation would have been impossible. In a certain percentage of the cases, however, the operation would doubtless be of value. The chances of success are greater in cases of hemorrhage of early childhood, as Dr. Frazier had shown in a recent paper before the American Surgical Association.

DR. C. B. BURR, Flint, Mich., asked Dr. Starr what percentage of the presumably operable sixty cases, mentioned in his paper came to operation, and of those operated on in how many there were found palpable lesions to account for the conditions? He enquired because of recent experience in a case offering every diagnostic sign of operable focal epilepsy. The case was operated on very skilfully by Dr. Cushing, but to Dr. Burr's great disappointment nothing was found which would account for the symptoms.

DR. WM. C. KRAUSS, Buffalo, N. Y., spoke on the point whether or not the dura should be opened, if there is no bulging of the dura, and when there is a wide opening which would allow for increase in pressure. He had had four or five cases with Dr. Park, in which after a large opening and no bulging, Dr. Park was on the point o' closing the wound and sending the patient back to the wards, without having disclosed any lesion. In one case where there was a very large cyst of the frontal lobe without bulging of the dura and just as soon as the dura was opened a large amount of fluid escaped. The wound was then closed, and the patient made a good recovery for a short time. In another case, Dr. Park operated for Jacksonian epilepsy; there were absolutely no symptoms, except Jacksonian movement of the left arm. On trephining and opening the dura, which was not bulging, a fibroma, the size of a hickory nut, showed itself, which was easily removed and the man made a good recovery. In another case there was a large infiltrating tumor of the left frontal lobe, the size of a pullet's egg, and yet there was not the slightest indication of any bulging, or of there being anything abnormal under the dura. This has been his experience in many cases and he never hesitates to urge the dura being widely opened in all cases pointing to cerebral growth of some kind. This is especially important in infiltrating tumors and brain cysts when no increased intracranial pressure is made manifest at the trephine opening. His advice is to open widely the dura in every case of trephining for intracranial growths.

DR. F. X. DERCUM, Philadelphia, asked Dr. Starr the significance of the presence or absence of cerebral pulsation. In many cases after the bone is removed, there is no pulsation, while there are other cases in which pulsation exists. In his experience, the absence of cerebral pulsation is in keeping with increased intracranial tension. On the other hand, the presence of pulsation does not, of course, negative the existence of a tumor.

DR. M. ALLEN STARR, New York City, agreed with Dr. Mills that Jacksonian epilepsy may not be the evidence of local lesion, but that it may be one of the symptoms of general epilepsy. Careful study of such cases will, however, show the epileptic stigmata, and will determine that the symptom is a part of a general epilepsy. In these cases, he did not consider the patient a subject for operation. If Jacksonian epilepsy is the only epileptic symptom he would say, operate. In regard to the palliative operation and the question raised by Dr. Knapp, he said that, in several cases which he had operated on, the operation had not benefited the patient. Yet in giving space to the brain and relieving the pressure, a chance had been given to arrest the increasing optic neuritis and developing blindness and to relieve the distressing symptoms. He agreed thoroughly with the statements of Dr. Frazier, Dr. Spiller and Dr. Mills, that the skull should be opened in every case of tumor of the brain, whether it is expected to get the tumor out or not. It may do good or it may not, but the patient has the benefit of the chance that it may.

Replying to Dr. Knapp, he said it may be true that in many of these cases the results obtained are not cures. But he had two patients now, one operated on twelve years ago, and the other nine years ago for brain tumor, and they are going about living their lives with a great degree of comfort, and without the operation they would probably have died several years ago.

As to the condition inquired after by Dr. Burr, he said he could only reply in an off-hand manner and could not give statistics. In at least two-thirds of the cases operated on for focal epilepsy, some abnormal condition was discovered; cysts, small or large, adhesions of the meninges and the cortex, sclerosis of the cortex, spicula of bone sticking into the brain and so on. In his book on "Brain Surgery," published in 1893, he gave a number of illustrations of conditions which he had observed, drawn from a microscopic study made after excision

of the cortex. As to the exact percentage, he hardly ventured to say that there were more than two-thirds in which any lesion was found. He did not consider this anything against the operation. The dura should be opened in every case of operation for brain tumor, even if the tumor does not produce bulging, because certainly the tumors do not always give bulging. Many infiltrating tumors and many gliomatous tumors replace the brain substance, without increasing the brain contents. Even if no tumor is discovered, very often the symptoms are relieved, and he agreed with Dr. Mills that every case of brain tumor should be operated on.

Replying to Dr. Spiller's question in regard to operation in cases of glioma, he said he had operated on several cases of gliomatous tumor. In one case which he saw with Dr. Hartley, he excised a glioma from the third frontal convolution. The tumor recurred. Dr. Hartley afterward operated again, and found that the cavity had filled up and he took out a tumor as large as the first. The patient recovered but before a year had the third recurrence. The third operation resulted in the dissection of an enormous infiltrated tumor, and the patient succumbed, yet that patient certainly had a year and nine months of life added to him. Therefore, the absence of bulging is no indication that the patient ought not to be given the benefit of the doubt and operated on.

The absence of pulsation is very interesting. He did not fully agree with Dr. Dercum that the absence of pulsation is due to increased intracranial tension. He has seen cases in which there was absolutely no pulsation of the brain over the tumor and in which the pulsation was around the edges of the tumor. This was the very best indication that the tumor was there. In one case there was a subcortical tumor two or three inches deep, and there was the absence of pulsation, which was an indication that there was a tumor below the cortex. On the other hand, sometimes there is normal pulsation of the brain, in, around and above the tumor. Therefore, tumors may exist with pulsation, and they may exist without pulsation, and it is not possible to make any definite statement with regard to the presence or absence of tumors from the condition of pulsation of the brain in operations.

Dr. W. G. Spiller, Philadelphia, said, in regard to Dr. Mills' statement that the location should be accurately determined and the skull carefully measured, that he knew of an instance in which the tumor was missed by a quarter of an inch, owing to its being inaccurately localized. He was rather doubtful of the value of operation for removal in cases of glioma. He doubted if there is much benefit to be expected from the attempted removal of glioma, and whether the patient would not have lived as long, if not longer, without radical operation, as he believes there is a tendency of the glioma to grow faster after partial removal, for it becomes congested, better supplied with blood, and space is afforded for its growth. In one of the cases under his own observation, relief for a time was obtained by repeated operation. It is, however, almost impossible to distinguish at operation a glioma from a sarcoma. The former is infiltrating and it is probably impossible to remove the whole of the tumor. In one of the cases reported in which symptoms suggestive of brain tumor were present, a sudden gush of fluid occurred from the nostrils, possibly through the cribriform plate of the ethmoid bone, and afforded great relief. It seemed to be a palliative treatment by natural means. Dr. Knapp spoke of his very hopeful views. He tried to be conservative; if he was hopeful, it was because in the majority of cases palliative operation had been of benefit. By no means, did he believe that in every case there will be marked improvement. He is in favor of the dura being opened in every case of palliative operation. It should not be left open, nor should it be cut away, but it should be opened and the brain examined to see if there is any tumor. Recently he had seen a small tumor, half an inch in diameter, that could easily have escaped detection.

Meteorism of Typhoid.—Anders recommends turpentine stupes over the abdomen, or turpentine enemata, or the passage of a long rectal tube; also the change from milk diet to peptonized food, meat juices and albumin water.—*Denver Medical Times.*

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER AND ITS RESULTS.

WILLIAM J. MAYO, A.M., M.D.

(*Concluded from page 915.*)

quarters of an inch above the greater curvature, giving an opening somewhat oblique from above down, right to left not less than two inches in length (Fig. 1). The torn edges of the transverse meso-colon are attached to the suture line by three mattress sutures in such manner as to leave a perfectly smooth peritoneal border, the ragged and fatty margins being tucked up underneath so as not to cause adhesions. It is important that the distal end of the jejunum be attached as it naturally lies that it may at once drop to the left and posteriorly in its normal anatomical position.

The operation thus briefly outlined has a nominal mortality. We had but 1 death in 135 "no loop" operations. The anterior method preferably with a Murphy button or McGraw ligature, is occasionally demanded by reason of posterior adhesions or abnormalities in the meso-colon or duodeno-jejunal juncture; but as it sacrifices 18 to 20 inches of the most important part of the upper jejunum it can not be considered a close rival to the posterior operation. We have for the past year and a half abandoned all "loop" operations unless forced to them and in no case practice enteroanastomosis as a primary procedure. Of the total 600 gastric and duodenal ulcers 383 were subjected to gastrojejunostomy (64 per cent.).

The question arises—What results can be expected from gastrojejunostomy? In the early stages of any subject certain procedures gain a great reputation which later experience does not always bear out. While gastrojejunostomy is by all odds the most useful means of relief it is not a cure-all. It is purely a drainage operation and as in a large majority of cases the ulcers are situated in the grinding pyloric end of the stomach or upper duodenum, the alleviation afforded is certain and speedy. But if the lesion does not involve permanent interference with natural drainage the food will eventually pass out the normal opening rather than the gastrojejunostomy and a certain amount of shrinking of the anastomotic stoma or angulation may follow.

The dangers from this source are reduced to a minimum with a "no-loop" operation. The more serious the interference with the normal motility the greater the relief afforded by gastrojejunostomy, so that for indurated ulcer it is the method "par excellence." On the contrary in mucous lesions where the interference with gastric drainage is intermittent and due to muscular spasm the results are less certain.

GASTRODUODENOSTOMY.

The only operation on the stomach of any consequence which involves a new principle in surgery since the time of Billroth is that of Finney. It leaves the opening at the natural situation and the enlargement is downward along the greater curvature away from the ulcer area. Gastroduodenostomy is especially applicable to those mucous lesions which interfere with drainage through spasm. It supplements gastrojejunostomy admirably as its scope includes those cases in which the latter method has been less certain of cure and it has superseded pyloroplasty. We have had 72 cases with 4 deaths and the very large majority of those who recovered have remained well.

EXCISION OF THE ULCER.

Theoretically, excision of the ulcer is the logical procedure but it must be shown by careful examination that the one excised is the only one present.

The saddle ulcer of the lesser curvature, if it does not interfere with drainage, should be excised if practicable because, as has been pointed out, if the stomach is not dilated and the pylorus is open, muscular action will continue to force the food along the normal channel rather than out of the artificial stoma. Therefore, a direct attack on the diseased area under such circumstances, especially when the margins of the ulceration are hard and calloused, would seem to be sound practice. We have excised ulcers 14 times, 6 times of the lesser curvature and 8 times in connection with pyloroplasty and gastroduodenostomy, with no deaths.

RODMAN'S OPERATION.

Some four years ago it was suggested by Dr. William L. Rodman that as ulcer of the stomach in the large majority of instances was in the pyloric portion it would be wise to resect as one would do for cancer, closing both duodenal and stomach ends completely and reestablish the gastrointestinal canal by an independent gastrojejunostomy. We have performed this operation nine times with great satisfaction. All of the cases recovered and have remained well. It has its chief indication in indurated lesions in the vicinity of the pylorus.

RESECTION OF THE STOMACH.

The treatment of hour-glass stomach by some form of plastic gastrogastrostomy has been a popular operation but in the majority of instances the ultimate results are unsatisfactory as it leaves a large amount of scar tissue and if it happen that the pylorus is involved to any extent adequate drainage is difficult to secure.

Gastrojejunostomy on the proximal pouch does not prevent a certain amount of food passing into the distal loculus where it stagnates on account of loss of motility. Multiple gastrojejunostomies, one for each loculus with enteroanastomosis beyond, is an unnecessarily complicated procedure, especially if more than two loculi are present.

We have in 12 cases without a death resected the affected portion of the stomach in the following manner (Figs. 2 and 3): The gastrohepatic and gastrocolic omenta are divided and separated from the diseased area, a straight elastic holding clamp is placed on the proximal side across from the greater to the lesser curvature about one inch back from the proposed line of resection. On the distal side the clamp is applied obliquely from above down, right to left, to increase the diameter of the cut surface, saving from the greater curvature. In this way we have been able to secure on the distal side an opening two-thirds the size of the proximal one for suturing. By having one inch or more of the tissue projecting beyond the clamps the slack on the large or proximal side is taken up with each suture, the bite of the thread taking only two-thirds of the amount of tissue on the distal portion, a difference of diameter of one-third being disposed of in this manner without seam or noticeable pucker.

If the ulcer is situated close to the pylorus an end-to-end union is quite easy to obtain. In two cases we have been able to excise an ulcer of the duodenum close to the pylorus with direct union of the amputated end of the duodenum to the stomach, the pylorus being removed in both instances.

The last word on ulcer of the stomach has not been written and it is evident that no one operation will be applicable to all varieties. At the present time it would seem that gastrojejunostomy has the largest field of usefulness, especially in those cases in which there is permanent interference with gastric mobility by reason of obstructive lesions in the pyloric end.

For those cases in which obstruction is due to spasm or other non-mechanical cause the gastroduodenostomy of Finney is the operation of choice. In connection with this latter procedure the excision of an ulcer of either the stomach or duodenum in close proximity to the pylorus may be done with great satisfaction.

Gastric ulcers which do not interfere with drainage and in which there is no loss of motility should be directly excised if possible.

Calloused ulcers of large size and thick hard margins whether hour-glass or not, are best treated by some form of gastric resection as we have frequently found carcinomatous degeneration taking place.

The large majority of duodenal ulcers give indication for gastrojejunostomy. There are few exceptions in which excision or resection will give better results.

It can be shown that more than 90 per cent. of patients suffering from gastric and duodenal ulcer who have been subjected to operation have been cured. Failures are more often due to technical errors resulting in bad mechanics than to the inability of a properly executed operation to cure the disease.

To one who expects to practice surgery of the stomach we would strongly recommend a close study of the gastric manifestations of the neurasthenic state. Atonic dilatations, prolapse of the stomach and the various gastric neuroses may simulate ulcer very closely and a careful differentiation is absolutely essential for all of these latter conditions are unimproved and often accentuated by operation, bringing discredit on surgery as a whole.

DISCUSSION

ON PAPERS OF BILLINGS, LAMBERT, RODMAN AND MAYO.

DR. JOHN C. HEMMETER, Baltimore, stated that the recognition of gastric ulcer depends very largely on the exercise of the sixth sense. It is largely a diagnosis by exclusion. Recently he reported before the American Gastroenterological Association a method of diagnosing gastric ulcer which he hopes to be able to lift out of the sphere of speculation into that of absolute recognition and surety. He had a number of surgeons make experimental ulcers in dogs by removing the gastric mucosa. The incision was allowed to heal, and a suspension of bismuth subnitrate in 500 c.c. of water was placed in the dog's stomach, the dog being placed in the posterior position. He found that eight to ten hours afterward the bismuth could be recognized by means of the *x*-ray and the fluoroscope. In a case of very severe gastric hemorrhage in a human patient, whose stomach had been washed out with bismuth subnitrate and ice water, it was found at the necropsy by Recklinghausen that the bismuth had everywhere disappeared, except from the site of the gastric ulcer. There seems to be a peculiar form of exudate in ulcer which holds the bismuth, and the latter is shown plainly by the *x*-ray. In three instances he succeeded in diagnosing ulcer by this means. The patients were operated on and the ulcers were found. If the ulcer is located behind a rib, the rib will obscure the ulcer. Dr. Hemmeter stated that at times it is very difficult to differentiate between gastric ulcer and gallstones. There is not one symptom of cholelithiasis that does not occur also in gastric ulcer. The patient may even have jaundice in gastric ulcer and hemorrhages in gallstones when there is no ulcer present. To narrow down the diagnosis between gastric ulcer and gallstones, he advised giving eight grains of orthoform in one ounce of hot water. It will arrest the pain if it is due to gastric ulcer, but not if it

is due to gallstones.—As to the treatment, Dr. Hemmeter is convinced that the uncomplicated gastric ulcer is no object for surgical treatment. It is only when complications arise that more strenuous measures in the way of surgical intervention are indicated. When there is a perigastritis, or a stricture due to a cicatrix, a perforation, an intractable hemorrhage, in cases of persistent excess of hydrochloric acid, when there is a progressive atony of the stomach, then the patient should be operated on because there is something at the pylorus that is preventing the exit of food.

DR. MAX EINHORN, New York, thought at one time that all cases of pyloric obstruction had to be operated on. Among eight of his first patients operated on, four had to be treated medicinally for quite a while after the operation, and two died. This made him a little backward about recommending the operation; because the patient can get along tolerably well without operation, this procedure should not be recommended until the stage is reached where there is nothing else to be done. If the operation could be done without danger, with no mortality at all, then he would urge that all cases of pyloric obstruction be operated on, but not otherwise. As a matter of fact, benign pyloric obstruction, if not too far advanced, can be greatly ameliorated, and sometimes cured, by rational medical treatment.

DR. A. P. FRANCINE, Philadelphia, has been particularly interested in the incidence of gastric ulcer as found at autopsy. From the analysis of over 3,800 consecutive postmortems held at the Philadelphia Hospital, he found that chronic gastric ulcer occurred in 1.35 per cent. of the cases. This figure is almost identical with that obtained by Dr. Campbell Howard, of Baltimore, from a similar study. But Dr. Francine is inclined to believe that there may be error in figures gleaned even from this source, and this percentage is, if anything, too small. This comes about from the fact that a certain number of chronic ulcers heal and leave no scars, or the scars are so slight as to be overlooked in routine work. It is also true that small ulcers with minute openings on the gastric mucous membrane, which might during life have given rise to very definite symptoms, may in a similar manner be overlooked unless careful search is made for them. The great majority of acute ulcers heal and the diagnosis of acute ulcer rests with the clinician. Chronic ulcer is, as a rule, chronic from its inception. For the above reasons he feels that a fairer percentage, even for chronic ulcer, would be 1.50 per cent., or about three in every two hundred autopsies.

From the above studies Dr. Francine was much struck by the presence of tuberculosis and nephritis in these cases. In 76 per cent. of the autopsies these conditions were associated, and he was inclined to feel that in some way, possibly by reducing the general nutrition, and particularly the nutrition of the stomach, thereby creating a more favorable nidus for the action of the more direct or exciting causes of ulcers, tuberculosis and nephritis might be indirect factors in the etiology. With a larger experience, however, he has come to modify this view and to look on them as playing little, if any, part in the etiology. For of one hundred and forty-three cases of advanced pulmonary tuberculosis dying at the Phipp's Institute, in Philadelphia, there was not a single case of true gastric ulcer. In one case there was multiple, superficial ulcerations, evidently tuberculous.

As to why tuberculosis does not more frequently affect the stomach, Dr. Francine thinks it possibly owing to the powerful motor action of the stomach in rapidly passing on the contaminated food and sputum mass, and it is probable, too, that the glandular action of the stomach plays an important rôle in both hydrochloric acid and pepsin secretion. Clinical records of the incidence of gastric ulcer are, in general, subject to such error in diagnosis that he considers them of comparatively little value in estimating its true frequency. One condition which has come under his observation and which may lead to confusion is the hemorrhagic tendency or diathesis manifest in certain chronic dyscrasic diseases. He has known this to lead to error in cases of chronic nephritis, where antemortem there were definite symptoms simulating gastric ulcer, associated with the vomiting of pure blood, and yet at autopsy no sign of ulcer was found. Discounting, however, errors in diagnosis, he thinks that gastric ulcer is much more common clinically than pathologically.

DR. STANLEY P. BLACK, Pasadena, Cal., said that there is one test used extensively in the past, but which has been given up largely at present, and unjustly so, and that is the occurrence of peptonuria or albumosuria. Albumoses occur in the urine from ulcer in any part of the intestinal tract. In certain cases this may be of importance in arriving at a diagnosis, especially in obscure cases of gastric ulcer. He differed with Dr. Billings as to the advisability of putting the test for occult blood last. He would put it first, because it is a most important test; it is the test of last resort. Therefore, it is better to make that test first. The presence of occult blood in the stomach contents or feces does not mean necessarily gastric ulcer, but it is one found present almost invariably in gastric ulcer.

With reference to the treatment of this condition. Dr. Black would do as in any other case of ulcer, place it absolutely at rest; that is, keeping the stomach in an empty condition, excluding even ice, and relying entirely on rectal injections for nourishment. The physician ought to have a competent surgeon in consultation in every case to share the responsibility and to decide when surgical intervention is necessary. He believes with Dr. Rodman that excision is the ideal operation, but the technic of the surgeon is not perfect enough to avoid the great risk. However, the ideal operation of the future, the operation of the coming surgeon, will be complete excision of the ulcer and the entire ulcer-bearing surface.

DR. JOHN C. MUNRO, Boston, referred to 250 cases operated on at the Carney Hospital. Of these, approximately 70 were malignant, a half dozen only coming early enough for radical operation. The remaining cases were benign, and for these different types of operation were performed. In the typical gross ulcers the results have been so satisfactory that there is no longer any question in his mind as to the advisability of surgical treatment. Occasionally there occurs a disappointing result, the reason for which is not yet clear. For instance, in two cases of duodenal ulcers for which he performed a posterior anastomosis, there followed a perfect, immediate and persistent relief of all symptoms. Suddenly, at nine and fifteen months respectively, a sudden hemorrhage took place, from which one of the patients died. The fatal case was operated on by Roux's method; the other by Moynihan's. Progress up to the time of the recurrent attack was all that could be desired. It is only possible to speculate as to the true pathologic cause. Peptic ulcer comes to one's mind, first of all.

As to the type of operation. In the gross lesions Dr. Munro prefers the no-loop operation, as recently described by Mayo, and as used by him before Mayo established its logical value. These cases have remained complete successes, one of them being a congenital pyloric stenosis. Moynihan's method has proven far less satisfactory than either Finney's or Mayo's. The results from Finney's operation, when used judiciously, have been good, although the immediate benefit is slow to show itself, and for a while may lead to disappointment. Later reports from patients are reassuring and he has returned to this method for certain cases.

Dr. Munro has tried every type of operation on about 20 so-called neurotics, with, for the most part, visible, but insignificant evidences of past lesions, but without definite mechanical interference with the stomach functions. Almost without exception the results of drainage, no matter what method was used, have been disappointing or even fatal. The pathology of those cases is obscure. He thinks some are probably types of hysteria. Others are not wholly explainable on that hypothesis. The pathologic department of Harvard is working in conjunction with the hospital staff on these and other cases, and they hope soon to obtain some definite data that will help to clear up the confusion that surrounds this class of sufferers. Careful preliminary analyses and examinations do not clear up the diagnosis in many of them. If, at exploration, no sufficient cause for the symptoms is found, even though the relics of old-healed ulcers are discovered, he abstains from doing anything to modify the drainage of the stomach. Dr.

Munro is inclined to believe that it is this type of case, pathologically speaking, which gives the brilliant results obtained by medical treatment. He questions whether similar results are ever obtained in the medical treatment of gross infiltrated ulcers.

DR. JOHN M. FINNEY, Baltimore, referred to a surgical procedure suggested by him a few years ago, namely, pyloroplasty, a term to which some objection has been raised. The operation is essentially a gastroduodenostomy, but it has to do really with the enlargement of the pylorus. There are other methods of gastroduodenostomy, e. g., Kocher's subpyloric method, but the essential principle in Finney's operation is the enlargement of the pylorus itself. The proper term would be gastropyloro-duodenostomy. But on account of the length of the name he decided to retain pyloroplasty. His experience with this operation in the four years since he first performed it has been confined to thirty-five cases. He has used the method in all cases that have come under his care in which he felt justified in using it. In many cases he made use of other procedures. Of these thirty-five cases, two are of such recent occurrence, being still in the hospital, that he has eliminated them from the statistics. Therefore, only 33 cases are cited. Of these, four patients died. Autopsies were secured in these four cases, and in none of them could death be attributed to the operation. The first patient was a diabetic, who died on the fifth day after the operation from diabetic coma. The next patient was tuberculous, and in the fourth week after the stomach symptoms had been relieved by the operation, died of pneumothorax, developed while still in the hospital. The third case was one of those interesting cases of gastromesenteric ileus. The fourth patient was pregnant. Some days after the operation she developed a grave toxemia from which she died. Autopsy showed no peritonitis, but an intensely fatty liver.

The results, so far as the operation itself is concerned, in all the cases shown by the autopsy, were entirely satisfactory. Those cases in which Dr. Finney performed the operation cover practically all the conditions which one meets with in connection with acute and chronic ulcer. Of acute ulcers there were five cases: three were bleeding at the time. Four recovered and are well. One he has not heard from. The end results have been traced in all but two of the cases. Of healed ulcers, where there was simply a stenosis, he had sixteen cases. Of these he has heard from all but one. The others are all well.

Of dyspeptics there were nine cases; four well; one improved; two died; one not heard from, and one too early to report on. Of the obstructions where gastrosuccorrhea was present, there were two cases. Both patients are improved. In the large class of neurotic cases Finney performed six operations, against his protest in four cases. Three were unimproved. One has been improved up to the point where she is able to live in comfort.

DR. D. S. FAIRCHILD, Clinton, Ia., thought that the history of ulcer of the stomach in the future must be somewhat different from what it has been in the past. The early diagnosis of ulcer of the stomach has been shown to be difficult, only those who are skilled in diagnosis are able to determine with any degree of accuracy the existence of ulcer until certain organic changes have taken place in the stomach, such as contraction of the pylorus. In the future, when the diagnosis is made earlier, the statistics will be changed on account of the fact that a large number of cases will be distinctively medical. In the West the cases have not been regarded as ulcers of the stomach until the disease has become chronic, and then it has been too late for medical consideration. A very large percentage of these cases must be surgical in their character. Therefore, with earlier diagnosis in the future more of these cases will be medical ones. The fact of surgeons accepting medical treatment of ulcer of the stomach is based on the failure to find anything pointing toward chronicity or any considerable degree of contraction of the pylorus. When the stage of chronic ulcer of pyloric contraction is reached, then surgery must be resorted to.

Dr. Fairchild believes that ulcer of the duodenum is more distinctively a surgical condition than is ulcer of the stomach, because the walls of the duodenum are thin, and it often happens that symptoms are not very distinctive until the very dangerous condition of perforation has arisen. Therefore, it seems that the rule in the treatment of ulcer of the duodenum should be different from the rule in the treatment of ulcer of the stomach on account of these serious dangers arising in an unexpected manner.

DR. C. S. WILLIAMSON, Chicago, called attention to the fact that a considerable number of ulcer cases run their entire course with almost the precise symptoms of the most frequent neurosis of the stomach, namely, hyperchlorhydria. In this group of cases there is no pain after eating, but, on the contrary, a sense of discomfort one or two hours after eating, often relieved on taking food or some alkali. Again, the tender spot so characteristic of ulcer may be lacking. There is instead a diffuse hyperesthesia over the entire stomach area. The dorsal pain point also is lacking. In fact, a considerable number of cases of ulcer of the stomach may run their entire course without any symptoms, except those of hyperchlorhydria. This is important because there is absolutely no way of making a diagnosis in the early stage in these cases, excepting by the presence of blood in the stool, the presence of blood in the gastric contents being of much less importance owing to the possibility of trauma from the stomach tube. Dr. Williamson urged that in this group of cases one should never omit to examine by means of the Weber test for occult hemorrhages. The persistent presence of occult hemorrhages, coupled with the symptoms already mentioned, make a diagnosis of ulcer of the stomach in the highest degree probable, although by no means certain. Occult hemorrhage is not a pathognomonic symptom, but simply one which adds greatly to the probable correctness of the diagnosis. A case coming under observation early, with persistent symptoms of hyperacidity and the repeated occurrence of blood in minute quantities in the feces makes the diagnosis of ulcer highly probable.

As to the negative significance of occult hemorrhages, almost no number of examinations for occult blood justifies a positive conclusion. On more than one occasion examinations were made repeatedly, two or three times a week, without finding any blood, and yet ulcer was present. In one case seventeen negative examinations were made, and the eighteenth was strongly positive. So that it is clear that every ulcer does not bleed, at least not at all times. If it does bleed, then it is a distinctively positive sign. If, on the other hand, occult hemorrhages are not found, then we should not jump at the conclusion that ulcer is absent. We should examine repeatedly and continuously. The situation is exactly the same as for examination of tubercle bacilli in the sputum. No number of negative examinations have any great weight, unless they are made with the greatest care and thoroughness and under the most favorable conditions, and even then the examination is never conclusive. There are a few cases where the Weber test, a very reliable test, will leave one in doubt. Under those circumstances one should never fail to make a corroborative test. The best corroborative test in Dr. Williams' judgment is the modified hemin crystal test of Strzyzowski.

DR. A. J. SPIVAK, Denver, speaking of the treatment of gastric ulcer, especially the test treatment, said that not even water should be allowed, because water is also expelled from the stomach by peristaltic action, and, therefore, the ulcerations will not be benefited. In fact, to secure absolute rest of the stomach not even nutrient enemata should be given because they also produce peristalsis of the intestines, if not of the stomach, and peristaltic movements of the intestines produce a certain vibratory movement of the stomach, and, therefore, absolute rest of the stomach is not secured. Dr. Spivak does not understand why we should try to give these patients food. It has been seen from Dr. Ochsner's treatment of appendicitis that a patient can live ten or even twenty days without a particle of food. Why then should we want to give these acute ulcer cases food or anything at all that will irritate the whole or any part of the gastrointestinal tract of the patient. He is positive that we should have had greater and better results if the appendicitis treatment of Dr. Ochsner would be carried out, not only by not giving food by stomach, but also not by the intestines, in any case of acute gastrointestinal disorder.

DR. GEORGE W. MCCASKEY, Fort Wayne, Ind., stated that he considered the work of Dr. F. B. Turck to be the greatest advance yet made in working out the pathology of gastric ulcer. Not only that Dr. Turck succeeded in producing typical ulcers by the feeding of colon bacillus cultures to dogs, but he has obtained this result not as an exception, but with remarkable uniformity in a large number of instances. If the histologic changes which Dr. Turck showed are to be credited, then we must minimize the importance of the gastric juice as an early factor in the production of gastric ulcer, because his examinations showed that the initial process is not one of self-digestion, but that it is one of autocytolysis. Dr. McCaskey has no doubt of the correctness of Dr. Billings' conclusion that the gastric juice is one of the principal factors in the grosser and later changes of gastric ulcer, but in the early changes it seems probable that the process is one of autocytolysis and not one of digestion.

He does not believe that it is safe to lay down a hard and fast rule in the matter of early feeding in gastric ulcer. He referred to two series of cases occurring in the Massachusetts General Hospital. In one series no food was given for some time. In the other series feeding was started almost immediately, and the difference in results was very small, indeed. The proper thing to do, he said, is to individualize the cases; to discriminate; to study. Take, for instance, a patient suffering from repeated hemorrhages. The emaciation may be extreme; the nutritive processes at the lowest ebb, and reparative processes can not go on in ulcer anywhere under such circumstances. Therefore, he believes, that in many cases we ought to feed these patients at once in order to restore those properties and constituents of the blood which permit the reparative processes to go on. He is generally in favor of the routine treatment of starvation for a limited period of time, with rectal feeding and the gradual use of stomach feeding later on, but in some cases the nutritive processes are so low that the patient should be fed even at some hazard.

With reference to the use of the stomach tube, he is highly in favor of its use in all cases where there is persistent débris in the stomach. It is absurd to talk about giving rest to a stomach that is full of débris and irritating secretions. Every day or, at least every other day, we ought to cleanse the stomach; and then introduce a bismuth suspension. The mortality from gastroenterostomies, he thinks, does not express all of the hazard and injury incurred from such an operation. He is heartily in favor of operation in properly selected cases, but it seems among other things that objections to adhesions formed between the stomach and bowel must cripple the peristalsis of these organs ever afterward.

DR. W. F. ANDERSON, Farmville, Va., referred to a case of acute gastric ulcer occurring in a young woman to show what rest can do. After persistently trying various remedies recommended and accomplishing but little, he determined to stop all medicines and to give the stomach complete rest. He allowed no food or water in the stomach for twenty-one days, but during that time saline enemata were given to supply the body with necessary liquids, and also nutrient enemata every eight hours. The patient began to improve promptly under this treatment. On the twenty-first day a little hot water was given by mouth, but it was returned promptly. Dr. Anderson then concluded to let the patient wash out her stomach herself with a quart of saline solution twice every twenty-four hours. After a day or two the fluid was returned clear and the patient is on the road to recovery.

DR. WILLIAM H. WATHEN, Louisville, Ky., referred to the error in the statistics of gastroenterostomy by the internists who oppose the operation to the extent that the surgeons advise it. He said we are as yet too young in the work of gastroenterostomy to draw accurate conclusions as to what will be in the future the ultimate or final results from this operation. This operation was performed but relatively a few times until about five years ago, and the literature on the subject shows that there has been an entire change by the leading surgeons of this country and of Europe in the method and technic of gastroenterostomy during that time. In this country, until about one year ago, most surgeons were either making the anterior anastomosis with an entero-anastomosis between the afferent and efferent limbs of the loop, or a posterior retrocolic anastomosis with a loop, and also an entero-anastomosis, frequently with obstruction or division of the proximal end of the jejunum, or with obstruction or division of the pylorus. Now, no surgeon would be considered modern in his methods, who did not as an operation of election eliminate the loop and the entero-anastomosis. Dr. Wathen never believed in or practiced any other method, claiming that the numerous immediate and ultimate bad results were all caused by a faulty technic. In the practice of Moynihan and Robson it was first noted that these complications did not follow the operation when the anastomosis was made posterior near the duodenojejunal junction to the lowest part of the stomach.

DR. CHARLES G. STOCKTON, Buffalo, N. Y., said that while there are cases in which there is hemorrhage and no ulcer, there are also cases with cachexia in which hemorrhage is profuse and repeated and in which no ulcer and no cancer is to be found, either at the operation or at the postmortem. That class of cases should be borne in mind as being a source of disappointment to the surgeon and to the internist.

DR. J. M. ANDERS, Philadelphia, stated that the surgeons and postmortem records of large hospitals have taught the internist that many cases of both gastric and duodenal ulcer go unrecognized. This fact renders it clear that diagnostic methods must be improved. In this connection, a point of first importance is that the internist follow the individual case to the operating table, if surgical intervention is required, with a view to confirming or disapproving his previous opinion with reference to the question of diagnosis. This is a means of improving one's diagnostic powers, which has scarcely been appreciated to the extent it deserves. From the statements made by Hemmeter and others, he said, it is obvious that the profession should inform itself in certain directions; it needs to be enlightened on the relation of pain, vomiting and other symptoms to the particular site of the gastric ulcer; also on the effect of ulcer according to its site on the bodily weight, and finally, by the special location of an ulcer on the development and character of the complications and sequelæ. Until information on these points is forthcoming, the ability to recognize these conditions and discriminate them from other affections, which simulate them, must remain imperfect.

Dr. Anders heartily endorsed what was said with reference to the importance of periodic occult bleeding as a diagnostic symptom of gastric and duodenal ulcer, but called attention to the fact that this valuable feature is often overlooked for the reason that in chronic ulcer the stools are often passed into the modern water-closet, hence are never observed. It should be an invariable rule in cases of gastric and duodenal ulcer to employ a bed-pan or other vessel, and a systematic, routine examination of both the dejecta and vomitus should be carried out.

It must be admitted, he said, that there is a surgical treatment and also a clearly-defined medical treatment of gastric and duodenal ulcer, but he emphasized the fact that the combined medical and surgical treatment can not fail of giving the best results, and by that he means observation of cases by both physicians and surgeons. The majority of the cases first fall into the hands of the internist, who, he thought, is inclined to procrastinate, as a rule, in the matter of procuring surgical advice.

DR. FRANK BILLINGS, Chicago, said that he was glad to hear Dr. Hemmeter say that the Roentgen ray will always reveal a gastric ulcer. That has not been his experience. The Roentgen ray, in his estimation, is an instrument more at fault in its interpretation than any other diagnostic aid in use. The instruments used and the ray itself are all right, but they are operated by individuals who do not know how to use them and who do not know how to interpret shadows. If he had to rely on the Roentgen ray to prove, finally, that a patient had an ulcer of the stomach, he fears he could not do it.

As to the use of orthoform as a differentiation between gastric ulcer and cholecystitis, he has found that orthoform does not always stop the pain of ulcer.

Concerning the treatment, Dr. Billings emphasized what Dr. McCaskey said, to study the individual case and treat it individually. There are two varieties of ulcer, the acute soft and

the chronic indurated ulcer. Physicians all are of the opinion that the former may heal under rest, whereas the spontaneous healing of a chronic indurated ulcer is always in doubt. The physician who has such a patient in charge and attempts to cure by the use of medical treatment for six months, must test results of the treatment by constant attention to all the symptoms recognized as ulcer. The motility of the stomach, the presence of pain and the presence of occult blood must be considered. The continued loss of blood in the stool goes on many times in cases that are under the rest cure, and such patients have anemia and continued loss of weight in spite of all attempts at rectal or other forms of feeding. This, in his opinion, is one of the chief reasons why such people are surgical patients. In other words, chronic indurated ulcer of the stomach is a surgical disease. That does not mean that it is going to be a cutting treatment. It is a mechanical treatment, and if the rest treatment can heal these patients it should be done, but it must be proven that the ulcer is healed. His experience has been that a majority are not healed. They are simply latent and usually are finally referred to the surgeon.

As to the end results of surgical treatment. The last word has not yet been said, and it means that the physicians and surgeons are not to quarrel over this matter. They must work together. The surgeons will let the internist have the opportunity to examine and to attempt to cure these patients in any way at his command, but failing to accomplish this, the surgeon shall have the patient. The surgeon should keep a record for several years, so that in five years we may have valuable data.

DR. ALEXANDER LAMBERT, New York, said the question that seems to be the most disputed is whether the patient should have water and ice during the rest treatment. What he said was that they may have it. Dr. Black, he thinks, is perfectly right when he says that some patients will do better without it because they are nauseated by water or ice. But it is impossible to lay down any hard and fast rule in that regard. These patients must be treated as individuals and not as a class. Make rules for each patient and not for all cases of gastric ulcer. The importance of absolute peristaltic rest was, he thinks, overestimated. The stomach should have complete rest from digestion and the mere giving of rectal enemata will not seriously disturb that rest. Absolute starvation may be wise in some patients, but it is certainly very unwise to take a half-starved patient, one who is going to pieces from malnutrition, anemia and starvation, and try to help him further by starving him for a week. In some cases it may be wise, while in others it is absolutely contraindicated.

DR. WILLIAM L. RODMAN, Philadelphia, said that he believes that medical treatment should be carried out for four weeks and that then, if not successful, it should be followed by surgery. Chronic ulcer rarely is cured by medical means. It seems to be a surgical condition, just as acute ulcer is strictly a medical condition. He was very much gratified that practically all the essayists were agreed that the direct method is preferable in the treatment of hemorrhage, where it is practicable. Gastroenterostomy is a makeshift. It will not arrest hemorrhage from a vessel of any considerable size, but only a capillary leak, and in the majority of instances the hemorrhage is from a vessel of importance. He believes that this is a further argument for radical measures. If, as Dr. Hemmeter said, it is possible with the bismuth test and the *x*-ray to diagnose the site of ulcers, surgeons certainly will be able to excise these ulcers better than they can at the present time and with far better results. The trend is increasingly toward excision.

DR. W. J. MAYO, Rochester, Minn., said that Dr. Munro, in calling this "no-loop" gastroenterostomy method the "Mayo operation," is doing them too much honor. There are really but two men who can claim any great amount of credit, Woelfler and von Hacker. All operations devised since their time have been merely modifications made to meet certain conditions. As to the operation which the Drs. Mayo have advocated, the only claim that they have in the operation, said he, is that they have gathered up from different men certain points and ideas that seemed good, assembled them as a whole, tied a string around them, and all they own is the string.

Surgery, he said, has made mistakes in connection with stomach operations, and when these are all summed up, it is the non-indurated mucous ulcer that has failed to obtain surgical relief and in many of these cases the diagnosis is still in doubt as the ulcer was not demonstrated. When the surgeon opens up the abdomen and fails to find what he expected, a gastric or duodenal ulcer, that is, when he can not demonstrate the ulcer and can not show that there are mechanical conditions present, he is getting on dangerous ground. He may have one of the cases that will be a discredit to surgery.

Differential diagnosis between gastric and duodenal ulcer is immaterial to the patient; he does not come to the surgeon filled with pride that he has a gastric ulcer, but he wants relief, and he can be surgically relieved as easily from the one condition as he can from the other.

Dr. Mayo endorsed everything Dr. Billings said. These cases are medicinally relieved and temporarily benefited, but are not often cured. It is up to the surgeon to show whether he can do better than can the medical man. So far as the indurated and calloused ulcers are concerned, they are surgical conditions. Dr. Mayo facetiously put it this way. When he has been asked when he considered that a gastric ulcer should be operated on, he has said not until it has had nine medical cures. These cases relapse. The patient gets a rest cure and is better for a few months. The trouble returns and he goes to some other physician, until, finally, he gets so that he starves himself, because, after all, it is the starvation that relieves, unless the ulcer is dealt with radically.

It is the same old question that came up in regard to gallstones and appendicitis; each attack had a medical cure, so that one case might mean ten or fifteen such cures. These cases do relapse and the majority of the patients will be treated surgically, if we can demonstrate to fair-minded men that we can get better and more permanent results than can the internists.

Clinical Notes

A CASE OF PURPURA HEMORRHAGICA.

LOUIS A. LEVISON, M.D.
TOLEDO, OHIO.

Patient.—A white woman, aged 55, was admitted to the Lucas County Hospital, Toledo, March 26, 1906, complaining of weakness and expectoration of blood.

Family History.—The woman's parents died of "paralysis," aged 65 and 64, respectively. One sister died of typhoid fever. There was absolutely no tendency to bleeding in any member of the family, either immediate or collateral. The patient had five children, one of whom died in infancy. The other four children are alive, and with the exception of a low order of mentality in one son, show nothing of interest.

Personal History.—The climacteric was passed at the age of 43, and neither then nor at her confinements was bleeding excessive. Her past life has been free from pathologic incidents, and with the exception of measles, "muscular rheumatism" and what she calls "eczema," there are no diseases to be recorded. The woman had once or twice complained of night-sweats; she had no other symptoms of tuberculosis. She would lie in bed too weak to walk; one attempt at walking was followed by collapse. She almost continuously expectorated a thin bloody sputum which oozed from the gums, palate, pharynx and tongue. Epistaxis recurred at varying intervals, lasting from a few minutes to three or four hours.

Examination.—Temperature was normal; pulse varied from 62 to 98; respirations were 20. The "eczema" had left rather extensive scars over the flexor surfaces of both forearms and the left supraclavicular and infraclavicular fossæ. Syphilis was denied, and with the possible exception of these scars, there were no evidences of this disease. Nutrition was fair, and, despite the persistent hemorrhages, there was no great loss of weight. The face was very pale and the lips anemic. Lips, tongue, gums and palate were covered with a dark brown stain, consisting of dried blood. The tonsils were not enlarged. When bleeding from the mouth was free, small blebs containing blood could often be observed on the hard palate.

These varied from 5 to 10 mm. in diameter. The nostrils at times were also covered with dried blood. The pupils were equal and responded to both reflexes. The glands of the body were not perceptibly enlarged. The skin was soft, moist and over the flexor surfaces of each forearm and the left clavicular were depressions, extensively scarred. These scars, particularly over the arms, had a peculiar network-like appearance. The thorax was of fair size, symmetrical with fair expansion. Palpation, percussion and auscultation showed normal lung findings. The apex impulse of the heart was ill-defined in the fifth interspace within the nipple line. The heart was normal in size. At the apex was a very soft, systolic murmur, not transmitted to the left side or back. The abdomen was apparently normal. There was no sensitiveness to pressure; the liver and spleen were not palpable and showed no increase or decrease in percussion boundaries. The ankles and feet were not edematous throughout the course of the disease, but became slightly so after the patient left the hospital. The genitalia and rectum were negative.

Hemorrhagic Eruption: Scattered over face, trunk, arms and legs were innumerable fine petechiæ, varying in size from 1 to 5 mm. By far the greatest number were very small, pinhead spots. They were most thickly placed over the extensor surfaces of the legs, between the knees and ankles. Here it was impossible to touch a spot with the end of the finger, where the skin was clear. Over the remaining parts of the body, the back, chest, face, arms, hand, etc., the spots were more discrete and also larger. The spots partially disappeared at times, and about May 1 the body was fairly clean, although at the places where the lesions were thickest, the skin had a greenish-yellow tinge from the decomposed blood. Slight bruises, incidentally sustained, were marked by bloody extravasations out of all proportion to the injury. None of the petechiæ disappeared on pressure.

Blood examinations were interesting. Table 1 shows the number of red and white cells and the hemoglobin per cent. (Dare).

TABLE 1.

Date.	Erythrocytes.	Leucocytes.	Hæg. %
March 26	4,720,000	5,400	55
April 16	2,816,000	3,000	..
April 19	3,176,000	....	..
April 23	1,336,000	2,000	25
April 28	2,528,000	3,000	30
May 1	2,480,000	2,200	25
May 3	2,496,000	2,200	40
May 8	2,048,000	2,000	30
May 11	2,536,000	1,600	55
May 16	2,344,000	3,000	60
May 19	2,384,000	2,800	50
May 21	3,320,000	1,400	50
June 19	5,152,000	3,200	85

TABLE 2.—DIFFERENTIAL COUNT.

Date	Polymorpho-nuclears.	Lympho-cytes.	Mononuclears.	Mast Cells.	Eosinophiles.
April 23	63	31.5	5	0	0
May 1	59.5	26.5	13	1	0
May 5	45	45	9	1	0
May 9	50	41	9	1	0
May 17	46	30	22	2	0
June 19	60	30	9	1	0

In making a differential count, both small and large lymphocytes are included under lymphocytes and the transitional cells are counted as mononuclears. The important alterations in these counts have been the high proportion of lymphocytes and the absence of eosinophiles.

In examining smears, while not making regular counts, I did see one and possibly two eosinophiles. This small number out of many thousands of white cells observed is of distinct interest. The coagulation time of the blood was delayed at first to ten minutes, but this period was shortened during the course of the disease. Red blood cells did not show many changes. Aside from the diminution in hemoglobin, the cells were not altered. Neither poikilocytosis, polychromasia nor basic stippling was noted. Parasites were absent.

Blood Cultures: Cultures were made in bouillon, glucose agar, nutrient agar and blood serum, but all these remained sterile. Inoculations of blood from veins of elbow into guinea-pigs were negative. The stools contained no blood.

Urine Examination: The urine was slightly turbid, light yellow, specific gravity 1020, acid. The twenty-four-hour amount varied from 1,000 c.c. to 3,040 c.c. The last examination showed the merest trace of serum-albumin; no serum-globulin or albumoses; glucose was absent. Microscopic examination showed a few red blood cells; no casts; calcium oxalate crystals were found in abundance.

Treatment.—On admission, the patient was given calcium chlorid internally, in gram doses four times daily. This was discontinued after three or four days, on the theory that it decreases the coagulability of the blood, if given for longer periods of time. Gelatin was given freely during the patient's entire stay in the hospital. The mucous membranes were painted with adrenalin chlorid during the hemorrhagic attacks. Iron and arsenic were given in the form of Blaud's mass and Fowler's solution, respectively.

Result.—Condition of the patient very slowly and gradually improved and she was able to go to her home ten weeks after admission. At present, the hemorrhagic attacks have ceased, but a considerable number of fine petechiæ remain.

REMARKS.

Purpura hemorrhagica has assumed much interest of late in connection with the bacterial investigations of many workers in this field. Letzerich was able to isolate an organism from the blood of a female patient, which produced purpura in rabbits. Other investigators have found bacilli or streptococci. The findings of various writers on this subject have been too divergent for us to consider the etiologic factor of purpura hemorrhagica as settled. In connection with the bacterial origin of this disease the low percentage of eosinophiles in this case is of interest. Simon has pointed out the relative decrease of eosinophiles in the infections, and this finding in the case is for that reason worthy of record as a possible link in the chain of evidence which tries to prove purpura an infectious disease.

Simon believes that a hypo-eosinophilia associated with an increase of the polynuclear neutrophilic elements is one of the "most subtle means of diagnosing certain bacterial infections," and cites a list of infections, including appendicitis, pneumonia, empyema, variously-situated abscesses, peritonitis, etc., in which this finding is present. If further observation should bear out the constancy of this septic factor of Simon its importance as a diagnostic sign would be unquestioned.

POISONING FROM OIL OF TANSY.

E. GARD EDWARDS, M.D.
LA JUNTA, COLO.

A case cited in THE JOURNAL, Aug. 11, 1906, prompts me to add to the literature the following case:

Patient.—C. H. J., aged 25, married, a large strong woman.

History.—I found patient in a convulsion that had every appearance of epilepsy and a history of having had three such attacks within a short time. The symptoms were almost identical with those described by Dr. Whitehill in the article referred to above. Respirations were rapid, pulse 124 and forcible; pupils dilated and without reaction, mouth bleeding, patient absolutely unconscious. There was a faint odor from the breath that reminded one of some pungent oil.

Treatment.—Acting on general principles, I gave 1/10 gr. of apomorphia. In spite of her benumbed condition, this produced copious vomiting, which was aided by filling her stomach, by a tube, with large quantities of warm salt water. One slight convulsion appeared after the administration of the emetic, and in forty minutes the patient was beginning to show signs of consciousness. At this time the respirations were 20, pulse 108, temperature 97. A hypodermic of strychnin, 1/30 gr., was given, and rest enjoined. Six hours later conditions were normal except temperature was subnormal.

Result.—The next day the patient was apparently as well as ever, and confessed to having taken 2 drams of oil of tansy about an hour before I was called, because of being overdue four days as to her periods, which had appeared some twelve hours after taking the medicine.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 859.*)

ARISTOCHIN.

ARISTOQUIN. DIQUININE CARBONIC ESTER. CARBONYL QUININE.

Aristochin, $CO(C_{20}H_{23}N_2O_2)_2 = C_{41}H_{46}N_4O_4$, is the neutral carbonic ester of quinine.

It is prepared according to the patents by acting on quinine dissolved in pyridin or chloroform with carbonyl chloride or by heating together quinine and phenol carbonate in the proportion of one molecule of the latter to two molecules of the former.

It forms a white, absolutely tasteless powder, melting at 189° C. (372.2° F.) insoluble in water, difficultly soluble in alcohol, more soluble in warm alcohol and chloroform, very sparingly soluble in ether. It is capable of combining with one and two molecules of hydrochloric acid forming soluble salts. It is gradually decomposed by acids with liberation of quinine, thus acquiring a bitter taste; hence it is incompatible with acids.

It should be free from bitter taste. As it is decomposed by acids and alkalies with the formation of quinine, it should respond to tests for quinine after such treatment.

Actions and Uses.—The same as those of quinine, but, since it is only slowly acted on by acids, it is said not to produce disturbance of the stomach and to be notably free from tendency to production of cinchonism.

Dosage.—The same as that of quinine, in powder, mixed with milk sugar, dry on the tongue or suspended in liquids.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). German patents No. 105,666, 134,307 and 137,308. U. S. patent No. 625,075.

ARISTOL.

A name applied to Thymolis Iodidum, U. S. P.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark No. 17,393.

ASPIRIN.

ACETYLSALICYLIC ACID.

Aspirin, $C_6H_4.O(CH_3CO).COOH$, 1:2 $= C_9H_8O_4$, is the acetyl derivative of salicylic acid.

It is prepared by the prolonged heating of 50 parts of salicylic acid and 75 parts of acetic anhydride at about 150° C. (302° F.) under a reflux condenser, and subsequent purification, by recrystallization from chloroform.

It forms small, colorless, crystalline needles, melting at 135° C. (275° F.), odorless and having an acidulous taste. It is soluble in 100 parts of water and freely soluble in alcohol or ether. It is readily split up on boiling with water or with alkalies with the production of acetic acid and salicylic acid or a salicylate.

It forms clear, colorless solutions, which do not develop a violet color on the addition of ferric chloride unless previously hydrolysed by boiling with sodium hydroxide. It gives no reaction with silver nitrate, and should leave no residue when heated on platinum foil.

It is incompatible with heat, moisture, alkalies, their carbonates and bicarbonates. It keeps well when properly protected.

Actions and Uses.—It acts like salicylic acid, over which it possesses the advantage of producing less of the undesired local and systemic side effects, on account of the slow liberation of the salicylic acid. It passes the stomach unchanged, the decomposition beginning in the intestine.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in capsules or wafers, or dissolved in sweetened water or dry on the tongue, followed by a swallow of water. The powder should be dispensed in wax paper.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 644,077. U. S. trademark No. 32,805.

BENZOSOL,

GUAIACOL BENZOATE. BENZOYL-GUAIACOL.

Benzosol, $C_6H_4(OCH_3)(C_6H_5COO) = C_{14}H_{12}O_3$, is a crystalline compound of guaiacol in which the hydrogen of the hydroxyl is replaced by benzoyl.

It is prepared by warming the potassium salt of guaiacol with benzoyl chloride and crystallizing the product from hot alcohol.

It forms colorless, minute crystals which melt at 59° to 61° C. (138.2° to 141.8° F.); they are odorless and tasteless or nearly so. It is practically insoluble in water, sparingly soluble in ether, but readily soluble in hot alcohol. It contains 54 per cent. of guaiacol.

It forms with sulphuric acid a permanent yellow coloration which on the addition of acetone assumes a characteristic, brilliant cherry red color, distinguishing it from salol, which gives a yellow color. Ferric chloride produces in the benzosol sulphuric acid mixture a violet color, changing to green and blue, and, on the further addition of nitric acid, to orange and green, or of potassium nitrite to green, violet and yellow. When heated (saponified) with alcoholic potash, the odor of guaiacol is developed.

It is incompatible with the alkalies, which split up benzosol into guaiacol and benzoic acid.

Actions and Uses.—Benzosol is decomposed slowly in the intestinal tract into guaiacol and benzoic acid which exert their proper actions. The liberated constituents are absorbed and excreted in the urine. It is not irritating.

Its uses are analogous to those of creosote and of benzoic acid. It is recommended in incipient pulmonary tuberculosis, as an intestinal antiseptic in fermentation, diarrhea, typhoid fever, diabetes mellitus and as a urinary disinfectant in cystitis, etc.

Dosage.—0.2 to 0.6 Gm. (3 to 10 grains), in powder, capsule, pill, or suspended in liquids or as an emulsion.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 453,035.

BETA-EUCAINE HYDROCHLORIDE.

EUCAINE HYDROCHLORIDE-β. BETA-EUCAINE.

Beta-eucaine hydrochloride, $C_5H_7N(CH_3)_3(C_6H_5COO).HCl$, is the hydrochloride of 2,6,6-trimethyl-4-benzoyl-hydroxypiperidine.

It is prepared by treating diacetonamine with paraldehyde, reducing the product with metallic sodium, benzoylating the vinyldiacetonalkamine so produced by treatment with benzoylchloride, neutralizing the resulting benzoylvinyldiacetonalkamine with hydrochloric acid and crystallizing.

It forms a white crystalline powder, soluble in 20 parts of water at the ordinary temperature, but more soluble in warm water, soluble in 14 parts of alcohol, producing neutral solutions which can be sterilized by boiling without change. The aqueous solutions yield ether soluble precipitates of the free base on addition of alkali hydroxides or carbonates.

The saturated aqueous solution gives no precipitate with mercuric chloride, which distinguishes it from the corresponding alpha-eucaine salt. It gives no color reactions with sulphuric or nitric acid, but yields a yellow precipitate with chromic acid, orange yellow with bismuth-potassium iodide, lemon yellow with picric acid, and a white precipitate with phosphomolybdic acid. It is incompatible with alkalies and their carbonates.

Actions and Uses.—Beta-eucaine hydrochloride is a local anesthetic like cocaine, but weaker and devoid of the stimulating properties of the latter. It does not dilate the pupil, nor does it contract the blood vessels as does cocaine. It has the advantage of stability even on prolonged boiling. It may be used in all cases in which cocaine is indicated as a local anesthetic, especially in ophthalmology.

Dosage.—It may be applied in a 2 to 3 per cent. solution to the eye, 5 to 10 per cent. for nose and throat and 5 to 10 per cent. for ointment for hemorrhoids.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering and Glatz, New York). U. S. patent No. 657,880. German patent No. 97,672.

BETA-NAPHTHOL BENZOATE.

BENZONAPHTHOL. BENZOYL-β-NAPHTHOL. NAPHTHOLIS BENZOAS.

Beta-naphthol benzoate, $C_6H_5.COO.C_{10}H_7 = C_{17}H_{12}O_2$, is the benzoic ester of β-naphthol.

It is obtained by heating b-naphthol and benzoyl chloride together at 170° C. (338° F.), extracting the product with alcohol, and crystallizing.

It forms colorless needles, or a white crystalline powder, colorless and tasteless, melting at 110° C. (230° F.). It is almost insoluble in water, but readily soluble in alcohol and in ether; it is also soluble in chloroform, in glycerin and in olive oil.

Benzonaphthol is decomposed by heating with caustic alkalies into naphthol and a benzoate which will then give their characteristic reactions.

To test benzonaphthol for the presence of b-naphthol it should be shaken several times with dilute solution of sodium hydroxide (1:10) and immediately filtered. If beta-naphthol is present in considerable amount it will separate as a turbidity or precipitate after acidifying with dilute sulphuric acid. If the amount of betanaphthol is small no precipitate appears, but the alkaline solution shows a bluish fluorescence and if it is boiled with chloroform, a green color is produced.

A solution of benzonaphthol should not give a violet color with chloride of lime or solution of iodine and alkali.

It is incompatible with antipyrine, camphor, phenol, ferric chloride, menthol, potassium permanganate, or urethane.

Actions and Uses.—Beta-naphthol benzoate is split up into its constituents on reaching the intestinal tract and acts as an antiseptic. It is said to be diuretic. It is used internally as an intestinal antiseptic in diarrhea and typhoid fever. Externally it has been recommended as a parasiticide in the form of 3 to 10 per cent. ointment, and has been used in psoriasis, eczema, scabies, etc.

Dosage.—0.2 to 0.5 Gm. (3 to 8 grains); maximum dose, single, 1 Gm. (15 grains), daily 4 Gm. (60 grains).

Manufactured by Fabrik von Heyden, Radebeul near Dresden (Merck & Co., New York). It is not patented nor trademarked.

BETOL.

NAPHTHALOL. NAPHTHOL-SALOL. SALINAPHTHOL.

Betol, $C_6H_4.OH.COO(C_{10}H_7) = C_{17}H_{12}O_3$, is the salicylic ester of β-naphthol.

It is obtained by heating b-naphthol-sodium and sodium salicylate with phosphorus oxychloride at 120° to 130° C. (248° to 266° F.).

It is a white, shining, crystalline powder, odorless and tasteless, melting at 95° C. (203° F.). It is insoluble in cold or hot water or glycerin, difficultly soluble in cold alcohol or turpentine, easily soluble in boiling alcohol, in ether, in benzene, and in warm linseed oil. In the cold it is not changed by acids or alkalies of moderate concentration. When heated with alkalies, it is decomposed into its constituents, which, if the solution is acidulated, will crystallize.

It is distinguished from salol by its higher melting point and by the production of a brownish green color, when a trace of nitric acid is added to its yellow colored solution in pure sulphuric acid. It burns on platinum foil leaving no residue (absence of fixed mineral impurities).

If 1 Gm. of betol is shaken with 30 Cc. of boiling water and filtered through a moistened filter, the filtrate should not have an acid reaction, (absence of salicylic, hydrochloric or phosphoric acid) nor should it after cooling show a crystalline deposit (salicylic acid or b-naphthol) and should not become turbid on the addition of silver nitrate (chlorides or phosphates) or barium nitrate (absence of sulphates) nor should it give a violet color with solution of ferric chloride.

Actions and Uses.—Betol is not affected in the stomach, but is split up in its original components when it reaches the intestinal tract by the pancreatic juice and intestinal secretions. It is believed to act as an intestinal antiseptic and, being excreted in the urine, to act in a similar way in the bladder.

It has the antirheumatic properties of salicylic acid. It is recommended for intestinal fermentations, catarrh of the bladder, particularly in gonorrheal cystitis, for rheumatism, etc.

Dosage.—0.3 to 0.5 Gm. (4 to 8 grains) in cachets, milk or emulsion.

Manufactured by The Heyden Chemical Works, New York. U. S. trademark.

BISMAL.

BISMUTH METHYLEN-DIGALLATE.

Bismal, $4(C_{15}H_{12}O_{10}).3Bi(OH)_3 = Bi_3C_{60}H_{51}O_{40}$, is a compound of bismuth hydroxide and methylendigallic acid.

It is obtained by digesting 4 molecules of methylendigallic acid with three molecules of bismuth hydroxide in water.

It is a voluminous gray-brown powder, insoluble in water or gastric juice, but soluble in alkalies, forming yellowish red solutions.

Actions and Uses.—Bismal is an astringent and is recommended for the treatment of chronic diarrhea.

Dosage.—0.12 to 0.3 Gm. (2 to 5 grains) in cachets or powder.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 605,246, German patent No. 87,099 (dropped in 1899).

BOROCHLORETONE.

A mixture of 1 part of chloretone (chlorbutanol) with three parts of boric acid.

Actions and Uses.—An antiseptic and anesthetic, used externally as a surgical dressing powder.

Prepared by Parke, Davis & Co., Detroit Mich. U. S. trademark.

BROMETONE.

TRIBROM-TERTIARY-BUTYLALCOHOL. ACETONE-BROMOFORM.

Brometone is 1,1,1-tribrom-2-methyl-propan-2-ol, $CBr_3.C(OH)(CH_3).CH_3 = C_4H_7OBr_3$, produced by the reaction of acetone on bromoform.

Made by the action of caustic alkalies on a mixture of bromoform and acetone.

Occurs in fine white, prismatic crystals which possess a camphoraceous odor and taste. It is slightly soluble in water, soluble in alcohol, ether, benzin and most organic solvents. It melts at about 167° C. (332.6° F.) and volatilizes on exposure to air.

Actions and Uses.—Brometone is claimed to have the sedative action of the bromides without the disadvantage of producing bromism. In doses of 0.3 Gm. (5 grains) four or five times a day, in adults, it is claimed to cause no unpleasant results and to produce no disturbance of the digestive organs, and to have no appreciable effect on the secretions. Its action is prompt and its effect is manifest for several hours. In doses exceeding 1.6 Gm. (25 grains) daily it may produce dizziness, vertigo, anorexia, and mental hebetude, all of which symptoms disappear on discontinuance of its use. Therapeutically it has been recommended in mild conditions of excitation and insomnia, in so-called narcotic abstinence, in hysteria and in nervous affections generally. It relieves some forms of cough and is said to produce amelioration in about 60 per cent. of cases of epilepsy. It has been used to relieve dizziness due to labyrinthine disturbances.

Dosage.—The dose is 0.3 Gm. (five grains), to be repeated two or three times during twenty-four hours.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

(*To be continued.*)

Radium in Trachoma.—Radium has been successfully applied by Kardo-Sisoyeff in 38 cases of trachoma, as he reports in *Russky Vrach.*, No. 20, 1906. The exposures were made every 2 or 3 days by means of a small tube containing about 10 mg. of radium. The tube was not pressed on the mucous membrane of the everted lids, but merely applied lightly and moved from place to place. The duration of each exposure was one minute. The benefit of the treatment was apparent as early as the second or third day, the granulations having become smaller, with very slight congestion. All forms of granulated conjunctivitis were treated, but the best results were obtained with papillary trachoma and diffuse infiltration. Especially in case of pannus the subjective symptoms were relieved by the second day, the lachrymation, photophobia, and spasmodic contractions of the lids.

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[For other information see second page following reading matter.]

SATURDAY, SEPTEMBER 22, 1906.

DISINFECTION.

Dr. Chapin's paper on disinfection[1] is of the kind that may do much good because it is likely to lead physicians to review critically their own ideas, convictions and practices anent disinfection. Judging from some of the remarks in the discussion of the paper, the word disinfection, as used by Dr. Chapin, seems liable to be interpreted wrongly. It is absolutely necessary in discussing this paper to bear in mind that the disinfection dealt with by its author is that "which is commonly carried out by health officials after death or recovery from contagious diseases." It is the routine practice of this sort of disinfection that Dr. Chapin attacks. As to cleanliness and other disinfective measures during the course of a contagious disease, Dr. Chapin appears to hold only the most orthodox views; and he emphasizes the far greater value of continuous cleansing, in the real meaning of the word, as compared with the perfunctory terminal disinfection, in limiting the spread of communicable diseases.

It can not well be denied that if proper isolation and real cleanliness be maintained from the beginning to the end of an infectious disease, counting the end as the period when there is adequate ground to believe that neither the patient nor his attendants and others with whom he has come in close contact during his illness any longer harbor the infecting agent, then there will be no call for the elaborate official terminal disinfection now prescribed and more or less commonly practiced. Clearly this ideal condition of things is not as yet generally realized or realizable. It is, however, the objective point of our efforts to minimize the spread of infection by the patient, and when this point is actually reached in a given case terminal disinfection should be omitted because unnecessary. There is, then, room for intelligent discrimination in terminal disinfection.

Certainly Dr. Chapin is correct, also, in his interpretation of the evidence of the relative importance of living beings and dead objects as carriers of infection. To-day there is no escape from the conclusion that the most important sources of infection in the diseases now in mind are the sick or convalescent patient, whether the disease is typical or atypical, and the so-called healthy "carrier." These sources may be ambulatory; in them the infective agents may multiply and persist; the most that contaminated dead objects ordinarily subjected to disinfection can do is to harbor for a variable time the causative agents which now only rarely find suitable conditions for multiplication. Hence terminal disinfection, even when effective, in reality possesses a relatively small power to limit infection, for the simple reason that fomites, after all, play a subsidiary rôle in the spread of infection. This being the case, it is a mistaken policy to rely on terminal disinfection to the extent that adequate and proper isolation and continuous cleanliness and the special precautions indicated in each particular disease become neglected. And this is the necessary result of blind, indiscriminating reliance on so-called disinfection as practiced by virtue of custom and dogma, and the real disinfectiveness of much of which may well be questioned.

Such questions as the real value of terminal disinfection are settled definitely by actual experimentation. Statistical studies are essential. It is desirable that the subject receive more attention from the investigative point of view than heretofore. Mere affirmation of a fact, e. g., the efficiency of disinfection, does not create that fact. There is already actual evidence at hand that tends to create doubt of the value of disinfection. Thus Dr. Chapin states that in Providence there was a recurrence in only 1.55 per cent. of 258 cases in which the warning card was removed without official disinfection—a somewhat better showing than in the control instances. In the *Semaine Médicale*[2] it is pointed out editorially that in Paris obligatory disinfection has been practiced systematically under favorable conditions for about fourteen years, but during the decennium 1895-04 there was no fall in the morbidity of scarlet fever, diphtheria and typhoid fever, while that of variola increased. There were some oscillations in the mortality, but no decided fall. These facts are interpreted as proof of the inefficiency of disinfection as carried out in France. We need further observations of this character.

While the value of terminal disinfection, for good reasons, is being questioned, the possible benefits of effective disinfection must not be withheld in the many instances where circumstances appear to indicate disinfective measures. This is true particularly in the case of tuberculosis in which precautionary measures and cleanliness have been neglected. In certain other diseases, e. g., typhoid fever, diphtheria, Dr. Chapin very properly places as a prerequisite a reasonable certainty that all the members of the household are free from infection. The burden of establishing this freedom from infection in most cases falls on our public health officials.

In determining their attitude toward the questions here discussed physicians should bear in mind that as our knowledge of the infectious diseases grows, especially as regards the sources of infection, the methods of

1. The Journal A. M. A., Aug. 25, 1906, p. 574.

2. July 25, 1906.

best combating communicable diseases necessarily require readjustment. This does not involve any weakening of "the germ theory" of infectious diseases. On the contrary a strengthening. Further, that at present the most effective preventive methods known are, speaking broadly, adequate isolation of the patient, continuous cleansing, i. e., disinfection, during the course of the attack, due recognition of the important and often too much neglected healthy carriers, and in certain diseases prophylactic immunization (vaccination, diphtheria antitoxin).

COLONIES FOR EPILEPTICS.

According to a careful estimate, says *Coöperation*, the organ of the Chicago Bureau of Charities, one in every five hundred of the population is an epileptic, and it, therefore, argues the importance of establishing public institutions for the care of these unfortunates. They are, it says, a burden to their friends and a menace to the welfare of others with whom they are associated, and yet they are not properly suited for the public institutions to which many of them are sent.

To a very large extent, this is the truth, but it is not exactly correct to infer that all cases need care in the same class of institutions, or even in any institution at all. The total of epileptics must include an appreciable number of individuals whose epilepsy is a comparatively slight disability and who are capable of maintaining themselves under the ordinary conditions in society. There are some, as physicians can testify, who, while suffering from occasional epileptic attacks, have their working power and social efficiency very little, if at all, impaired. There is another small minority of epileptics who require close restraint on account of their mental condition, and this class is much less than it would appear to be from the mistaken methods of their management. Many of the so-called dangerous epileptics are such only because of bad surroundings, ill treatment and probably also, in some cases, ill-advised medication. The fact that the use of the bromids can cause dangerous maniacal conditions was very early observed in the medical history of the drug, but has been too little appreciated, even up to very recent years.

A very large class of the epileptics, and probably the great majority, are perfectly suitable cases for an epileptic colony, in which they can be made not only happier and better in every way, but largely self-supporting. Perhaps it is not too much to claim that nine-tenths of those who are not practically disabled by their disease could be thus cared for. Under judicious management it is safe to say that the public epileptic colony could be the least expensive or burdensome to the taxpayer of any of the public charities. While economy should not be the first consideration, the nearest to self-support that is compatible with proper humane and scientific treatment should at least be the ideal in such institutions. There is no member of society that is more misunderstood by the general public than the so-called dangerous epileptic. A few are really dangerous and require restraint; the great majority of even the severe cases are perfectly manageable under proper surroundings by judicious moral and medical treatment. It would be impossible probably to remove every epileptic to such a colony, but for the great mass of those who are under public and private care it would be a blessing, and also a saving of public and private expenditure.

Epilepsy is not absolutely an incurable disease, even in such cases as are sent to the public institutions, there may be some capable of cure, and the curative treatment might well be an important object of the institution even if the results are not very great. The careful study of the disease will undoubtedly bring out many valuable facts and widen the scope of the curative function of the institution. At least this is a thing to be worked for, though the prospects of extensive results may not be the best. What has already been done abroad and in this country shows the possibilities for good of such colony treatment of the epileptic.

MILK AND ALCOHOL IN HOSPITALS.

Some very interesting data with regard to the comparative consumption of milk and alcohol in the London hospitals during the past forty years was the subject of an important communication from Sir Victor Horsley, the distinguished London surgeon, at the recent meeting of the British Medical Association at Toronto. These data are not likely to reach physicians through the ordinary channels because they were announced at the temperance luncheon instead of at the usual section meetings. According to Dr. Horsley the proportionate consumption of alcohol and of milk has been exactly reversed during the past forty years as the result of advance in medical knowledge with regard to the inefficiency of alcohol for the cure of disease. Forty years ago, at the beginning of the seventh decade of the nineteenth century, the expenditure for alcohol in the London hospitals was about $40,000 a year. The expenditure for milk during the same period was about $15,000. At the present time the annual expenditure for alcohol for medicinal purposes is about $15,000. The milk account on the other hand now runs up to over $40,000.

This represents very nearly the reversal of feeling in physicians' minds with regard to the relative value of these two fluids for the treatment of ailments of various kinds. It is true, as Sir Victor Horsley suggested, that the introduction of antisepsis and asepsis into hospital practice has accomplished not a little in doing away with the supposed necessity for stimulants. Forty years ago septic conditions were very common in the London hospitals and they were nearly always treated—as a sort of last resort—by large quantities of stimulants. Very few surgeons who recall those days consider that the

stimulants did much good, but something had to be done, and the remedy at least gave a sense of well being to the patient that prevented most of the symptoms of discouragement in the face of surely advancing death.

Milk, however, has risen very much in the estimation of physicians during the past half century. Not a little prejudice existed, especially with regard to the consumption of large quantities of milk, and it was somehow thought, because of isolated unfavorable experiences, to be rather difficult of digestion by those who were in poor health. Now, however, it is recognized that observations of this kind were due to individual idiosyncrasies, and milk has come to be looked on as the most important element for conserving strength and renewing tissue loss that the physician has at his command.

It seems very probable that this difference of attitude with regard to both alcohol and milk will continue to be even more marked as the years go on. While here in America, perhaps, such a complete reversal of form has not taken place, this is partially due to the fact that American physicians were never as free in their use of alcohol for medicinal purposes as their British colleagues, while the movement that has emphasized the comparative inefficiency of alcohol for many symptoms for which it was supposed to be almost the supreme remedy began later in this country than in England.

THE LIFE INSURANCE EXAMINER AND THE AGENT.

We have referred to a number of improvements in life insurance examination work that ought to be secured. The attempt of an agent to use an examiner in trying to coerce an individual to make application for insurance is another abuse which is detrimental to the reputation of both company and agent; it is resented by the applicant and often subjects the examiner to insults. The examiner should never be asked to make an examination until the application has been made. When he is sent to call for an examination where the individual has made no agreement or appointment, the agent should be required to pay the usual fee, and for repeated offenses of this kind should be disciplined by the proper officials of the company. It saves time and annoyance to both the examiner and the applicant for the physician to make his own appointment by telephone or otherwise. The contention sometimes made that such a communication may give a half-persuaded applicant an opportunity to withdraw his application is a sad commentary on the current methods of life insurance soliciting.

This insane haste to rush the application to the home office, and to force a policy on an individual who has not been convinced that he desires it, is responsible for the fact that a more exhaustive and leisurely examination can not be made in doubtful cases. The use of the more refined methods of diagnosis, among them the examination of the blood, the estimation of the blood pressure, the use of the ophthalmoscope, and the more exhaustive study of the urine, both clinical and microscopic, in a twenty-four-hour specimen, would sometimes enable the examiner to discover defects or to eliminate the possibility of their existence, while without them his judgment of the risk must be uncertain. Of course, where such supplementary examinations are made, a reasonable fee should be added to the minimum fee of $5.00 for the regular examination.

A reform in some of these features of the life insurance business would conduce greatly to the comfort and efficiency of the medical examiner, would be to the advantage of the insurance company, and ultimately to that of the agents, who are in the main responsible for the existing conditions.

PRIVATE GAIN vs. PROFESSIONAL BENEFITS.

Last week we devoted considerable space to our esteemed contemporary, the New York *Medical Record*, and its attacks on the American Medical Association. Underlying the series of *Record* editorials was the insinuation that the American Medical Association, through its JOURNAL, was accumulating money, and, further, that this money was being squandered or misappropriated, or something of the kind, by the trustees or by the officers of the Association, because—in the *Record's* opinion—a sufficiently detailed report of the affairs of the Association was not published to the world. This impression was conveyed in spite of the fact that every detail has been and is available at any time to those who are entitled to it. The *Record's* position as a critic in this matter will be appreciated when it is known that it does not publish and will not make known to any one even so much of its own affairs as its circulation. Every physician who contributes an article to the *Record* is interested in this particular information; he naturally wants to know something of the extent to which his article will be circulated if published in that periodical. Its circulation is also most important information for its advertising patrons, and is something that every advertiser has a right to know. The *Record* guards this information with the utmost care. It is conjectured, however, that its circulation is anywhere from 6,000 up—possibly the figure given is near the truth. It must be admitted, however, that if current reports are to be relied on, its circulation is constantly decreasing, and it might be embarrassing for William Wood & Co. to admit this publicly. But, be this as it may, what right has the *Record* to criticise the Association for the alleged withholding of minor details when it refuses to give to its patrons and supporters information of such fundamental and vital importance as its circulation?

Let us, however, consider another matter: We do not know what William Wood and Co.'s profits are from the *Record*, and it is not expected that a private firm will

publish such information. Considering, however, that the *Record* gives little more than half as much reading matter as does the ASSOCIATION JOURNAL, at the same subscription price, that their advertising receipts from the *Record* are large, it may be assumed that William Wood & Co. receive a fair profit from their paper, which is as it should be. In one of its editorials, the *Record* referred sarcastically and erroneously to a so-called surplus of a quarter of million dollars of the American Medical Association, not recognizing the difference between surplus and assets. In the commercial reports William Wood & Co., medical publishers, are rated at a pecuniary strength of from $300,000 to $500,000. Whence and from whom came this princely fortune? Since their business has been limited to publishing medical books and medical journals, it is fair to assume that it came from our profession. And what has William Wood & Co. done for the medical profession in return for this generous support which it has given them? Have they done anything? Nothing, absolutely nothing! Why should they! Since they are a commercial firm, what interest have they in our profession except what they can make out of it?

Now, what about the American Medical Association? Its income has been derived entirely from THE JOURNAL, which, for some years past, has made a fairly good profit. But these profits have been and are being used for the medical profession of the whole country, not necessarily for the individual members of the American Medical Association alone. From these profits the Association has been able to erect a building for its headquarters, thus realizing an ambition cherished by its members for many years; and has land to extend this building as the necessities of the future may require. It also has a reserve fund for future contingencies. For several years it has appropriated money for scientific research and for the development of organization and for better society work. To aid this work it is publishing a bimonthly bulletin, a periodical which is sent free to the presidents and secretaries of all the state and county societies of the country, to the councilors of the various state societies, and to others especially interested in building up county societies and making them more effective for good. Through its Council on Medical Education, it is working for higher standards and better conditions in medical education; and, through its Council on Pharmacy and Chemistry, it is endeavoring to check the dishonest practices of those who are offering to the medical profession fraudulent medicines and nostrums. For all this, and for other work of direct and indirect benefit to the medical profession as a whole, and to the public, the Association has been and is spending the money that it has received in profits from its JOURNAL.

A year and a half ago the Association entered on a campaign to expose and to check the frauds and deceptions that had developed in the proprietary medicine business. It was known that the movement would be opposed by some of the journals whose existence depended on the support of those who would suffer from this campaign. It was not believed, however, that the *Medical Record* would be found among these, standing, as it claimed to do, for scientific medicine, and receiving, as it did and does, its support from those physicians who would naturally endorse this campaign. It was naturally to be supposed that William Wood & Co. would see the righteousness of the movement and that, even at a temporary sacrifice of some of its advertising receipts,[1] they would endorse and support it. But what happened? Did they have the *Record* endorse it? Did they see the hand-writing on the wall? No. Not only did the *Record* not endorse it, but, on the contrary, it opposed it in many ways, using sarcasm and ridicule because it had no arguments to offer.

When certain nostrums which were being exploited to and through our profession were shown to be frauds, did the *Record* tell its readers about it? No. On the contrary, it sold an extra amount of advertising space to the promoters of one of these frauds to hold up to ridicule and caricature THE JOURNAL and the Council on Pharmacy and Chemistry, and then refused[2] to publish a reply in the form of a statement of facts. When the Porto Rico Commission sent a letter[3] to the *Record* correcting misstatements that were being circulated regarding a well-known proprietary preparation, the communication was not published, presumably because it reflected on one of the *Record's* most prominent advertisers; this in spite of the fact that the letter contained information that every reader of the *Record* should have received.

Thus the *Record*, by deliberately opposing the work of the Council on Pharmacy and Chemistry, by wantonly attacking the American Medical Association, and by attempting to cause discord in its ranks, by refusing to aid in the campaign against frauds in "patent medicines" and impure foods, and by siding with its advertisers rather than with its readers, has shown itself to be an enemy to the profession and antagonistic to the best interests of both the profession and the public. We leave it to the members of the profession to draw their own conclusions regarding the value, and, especially, the sincerity of hostile criticism emanating from such a source.

In conclusion, we again suggest to William Wood & Co. that they think over this whole matter; that they consider whether it becomes a firm, which has been able to amass a fortune from the support given it by the medical profession, to allow its publication to oppose a

1. Just as a sample of the advertising carried by the *Record*, we refer to a few now running in its advertising pages: Antikamnia, Ammonol, Phenalgin, Sal Codeia—Bell, Bromidia, Iodia, Neurilia, Eusoma, Papine, Echtol, Germiletum, Dioviburnia, Neurosine, Seng, Cactina Pillets, Tongaline, Echitone, Hagee's Cordial of Cod Liver Oil, Gray's Glycerine Tonic Comp., Vin Mariani, Kutnow's Powder, Uron, Syrup of Figs, Anasarcin, Robert-Hawley Lymph Comp., Micajah's Medicated Uterine Wafers, Hayden's Viburnum Comp., Zymoticine, etc.

2. THE JOURNAL A. M. A., Sept. 23, 1905, p. 935.

3. THE JOURNAL A. M. A., Oct. 7, 1905, p. 1099.

movement endorsed by the best element in that profession—a movement inaugurated for the furtherance of honesty in the pharmaceutical business, and for the benefit of the profession and the public.

STANDARDIZATION OF SUPRARENAL PRODUCTS.

One of the most important additions to our therapeutic agents during recent years is the series of preparations from the suprarenal gland. While we do not yet know how widely these preparations may be used with satisfactory results, we do know that their value as therapeutic agents is such that they are depended on in many conditions, and that they should, therefore, be of uniform quality and character. The reports[1] which we published two weeks ago of the experimental work on these preparations show very plainly that the preparations on the market are of variable quality and character. This must not be. There is probably as much need for the standardization of these preparations as there is for the standardization of other organo-therapeutic products, such as diphtheria antitoxin, vaccine virus, etc. It is perfectly practicable to determine the strength of these suprarenal preparations with accuracy and to standardize them. It is presumed that the preliminary investigation made by Dr. Reid Hunt for the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service was primarily to show the need of this standardization, and we understand that this department of the government is considering the advisability of undertaking a supervision of these preparations similar to that which is so effective for good in the case of some other products. The Division of Pharmacology of the Hygienic Laboratory is well equipped to carry out this work. We have no doubt that the manufacturers will welcome such supervision, since it is to their interest, as well as to that of the profession and of the public, that the preparations should have a standard for the guidance of those who make as well as for those who use them.

CATCHY NAMES AND THEIR DANGERS.

In our news columns this week will be noted a death in St. Luke's Hospital, Chicago, from the accidental use of a solution of atropin when urotropin had been ordered. This incident calls attention to the evil attendant on the prevalent manner of naming new remedies—proprietary, in nearly every instance. Is it to be wondered at that mistakes are made when we have to contend with the following similar names of preparations of widely different character and composition: Sanatogen, Sanitol, Sanitas, Sanoform, Sanoforme, Sanosal, Sanose and Sanosin? Then we have a variety of names that apply to the same article, as occurs in this particular instance which has caused a death. Hexamethylene tetramine is now an official preparation in the U. S. Pharmacopeia as Hexamethylenamine—an awkward word for physicians to get used to, but one that it seems will have to be adopted. This was first introduced as Urotropin, but now is on the market as Aminoform, Cystamine, Cystogen, Formin, Hexamin, Uristamine, Uritone, etc. Why not get rid of all these names and adopt the correct one—the official name? If the one who prescribed the urotropin at the St. Luke's Hospital had desired to use Schering & Glatz's preparation, it would have been an easy matter to have written "Hexamethylenamine (Schering)." In hospitals where young physicians are taking their first work in actual practice, which is the case in all hospitals having internes, would it not be worth while to set a good example by prescribing remedies under their official titles and not by perpetuating proprietary names?

1. The Journal A. M. A., Sept. 8, 1906, p. 790.

Medical News

CALIFORNIA.

Polyclinic Opened.—The San Francisco Polyclinic, formerly located on Ellis Street, was reopened at 443 Filmore Street, September 11.

Exclude Trachoma Immigrants.—The quarantine officer at San Francisco has refused landing to 48 persons suffering with trachoma, 27 of whom were Japanese and 15 Hindus, who arrived on the *Siberia*, September 12.

New College Building.—The College of Physicians and Surgeons, San Francisco, has let the contract for the erection of a one-story frame building, as a temporary building for its uses, along the northwestern line of Fourteenth Street and Woodward Avenue, for $19,722.

Personal.—Dr. Coyle J. Tracy, Pasadena, has been appointed a member of the insanity commission in Los Angeles County. ——Dr. and Mrs. John J. Tully, Stockton, have returned after an extended tour of Europe.——Dr. Redmond W. Payne, San Francisco, left for New York, September 8, en route for Europe.

The Dead in the San Francisco Disaster.—The health department announces that 452 persons lost their lives as a result of the earthquake disaster, April 18. Of these, 266 were killed by falling walls, 177 perished in the fire, 7 were shot, and 2 died as a result of ptomain poisoning. Of the dead, 420 are believed to have been white, 18 Chinese and 4 Japanese.

New Hospitals.—Dr. John L. White, superintendent of the Sacramento County Hospital, has been given permission to erect an open-air hospital for consumptives, to cost about $600.——The Southern Pacific Medical Department plans to erect two cottages and a one story building on the present hospital grounds in Sacramento, as the accommodations for patients do not equal the demands on the institution.——Work on the San José County Hospital, to be erected at a cost of $65,000, on the site of the old county building destroyed by the earthquake, will be initiated in October, and it is probable that the building will be ready for occupancy six months later.—— The Wentworth Hospital has been incorporated in Sacramento with a capital stock of $50,000, by Dr. E. M. Wilder, Sacramento, and others.——A hospital is to be built at McCloud by the McCloud Lumber Company, which will cost $25,000.

COLORADO.

Italian Dispensary Opened.—An Italian dispensary has been opened at Palmer and West Thirty-fifth avenues, Denver, providing medical service for indigent Italians. The following constitute the board of trustees: Dr. Daniel S. Neuman, president; Dr. Charles H. McLean, secretary; the consul-general of Italy and Drs. Sherman T. Brown, Giuseppe Cuneo and Clare P. Conroy. The consulting staff is made up as follows: Drs. Rodolfo Albi, Charles D. Spivak, Philip O. Hillkowitz, Amasa M. Bucknum and Pasquale De Cunto. The following make up the attending staff: Drs. Giuseppe Cuneo, Martin J. Waldron, Claud C. Keeler, Clare P. Conroy, Sherman T. Brown, Frank M. McCartney, Seymour D. Van Meter, Charles H. McLean and Orasio D. Abrahams; ear, nose and throat, Dr. Daniel S. Neuman; eye, Dr. Frederick A. Davis; nervous diseases, Drs. J. Elvin Courtney and Christian L. Neubert; dis-

cases of the stomach, Dr. Charles D. Spivak; obstetrics, Drs. Rodolfo Albi and Thomas M. Burns; bacteriology, Dr. Thomas W. Hall, and x-ray treatment, Dr. George H. Stover.

State Society Meeting.—The program has been issued for the coming meeting of the Colorado State Medical Society, which will be held in the Albany Hotel, Denver, October 9 to 11. The first two days and the morning of the third day will be devoted to the reading of papers and discussions on general subjects, while the afternoon of the third day will be taken up by section work. For just one-half day, therefore, the whole society will be divided into sections, as follows: section on surgery, gynecology and orthopedics, of which Dr. Walter A. Jayne is chairman; section on internal medicine and nervous and mental diseases, of which Dr. James Rae Arniell is chairman; section on hygiene and sanitary science, of which Dr. Hugh L. Taylor is chairman, and section on ophthalmology, of which Dr. Edward Jackson is chairman. Judging from the titles of the papers the latter section includes the subjects of laryngology and otology. Dr. Richard Cabot, Boston, will deliver an address Wednesday afternoon on "Mind Cure: Its Service to the Community." The program contains abstracts for most of the papers announced, which gives those who desire to attend an idea of the probable scope of the papers to be read.

DISTRICT OF COLUMBIA.

Decrease in Death Rate.—During the week ended September 1, 97 deaths were reported, a decrease of 23 from the record of the previous week. Of the decedents, 54 were white and 43 colored, indicating a total annual death rate of 15.6 per 1,000. Consumption, diarrheal diseases of infants, typhoid fever, heart disease and kidney diseases led the death causes.

IDAHO.

State Society Meeting.—The fourteenth annual meeting of the Idaho State Medical Society will be held in Lewiston, October 4 and 5. The council will meet in executive session on the evening of October 3, and the scientific proceedings will commence at 10:30 Thursday morning. The headquarters will be the Lewiston Commercial Club. The annual banquet will be held at the Raymond Hotel Friday evening. THE JOURNAL has just received the program and finds the list of papers to be one promising an interesting meeting. Dr. J. B. Morris, Lewiston, is president, and Dr. E. E. Maxey, Boise, is secretary-treasurer.

ILLINOIS.

Diphtheria.—An epidemic at Bardolph, near Bushnell, has grown to such proportions that the authorities have ordered all schools and churches closed.

Physicians Ill.—Dr. William C. Hill, Murphysboro, is reported to be critically ill with typhoid fever.——Dr. Amos S. Bickel, North Chillicothe, is seriously ill with anemia, at St. Francis' Hospital, Peoria.——Dr. Wilbur J. Hawkins, Aurora, is ill with appendicitis at his home.

State Board Reports.—The State Board of Charities in its quarterly report, just issued, states that since the organization of the board last April, the commissioners have visited every hospital for the insane in the state, 52 county almshouses, 52 jails, 19 orphanage and child saving institutions; it has investigated the charges against the Soldiers Orphans' Home, Normal; the Soldiers Widows' Home, Wilmington, and the Asylum for Feeble-Minded Children, Lincoln, and has inspected the schools for the deaf and blind at Jacksonville, and the Soldiers and Sailors' Home, Quincy.

Coroners Meet.—At the annual convention of the Illinois State Coroners' Association, held in Chicago, September 11, 48 counties were represented. Peter M. Hoffman, coroner of Cook County, was elected president of the association; C. Z. Noel, Joliet, and C. N. Streeper, Alton, were elected vice-presidents; R. L. Baker, Peoria, was elected secretary, and William Woodruff, Springfield, treasurer. One of the most important matters brought up was the necessity of passing a law compelling physicians to report cases of a certain class to the coroner. There is nothing at present in the statutes to prevent a physician of Illinois from signing a death certificate, although he may not have attended the deceased in the capacity of physician for a number of years.

Chicago.

The Work of the Visiting Nurses.—During August the Visiting Nurses' Association cared for 1,227 patients, and the nurses made 5,738 visits.

Gift to Hospital.—It has been announced that Dr. D. K. Pearsons has donated an additional $5,000 toward the fund for the new Presbyterian Hospital, which brings the total fund to within $10,000 of the $400,000 required.

Fatal Error.—Anton P. Freund, druggist at St. Luke's Hospital, has been discharged from that institution as a result of his mistake in furnishing atropin instead of a proprietary preparation of a somewhat similar name in filling a prescription for a patient in the hospital, who died soon after. The coroner's jury recommended that Freund's license as pharmacist be revoked.

New Maternity.—A new site has been provided for the Chicago Lying-in Hospital and Dispensary, now located at 294 Ashland Boulevard, at the northwest corner of Vincennes Avenue and Fifty-first Street. The cost was $52,500, and the new hospital will be erected at a cost of between $150,000 and $200,000. The new hospital, with 60 beds, will be able to care for 1,200 patients a year.

Personal.—Dr. Alfred C. Girard, United States Army, retired, has been obliged to give up his plan of practicing in Chicago, on account of the serious illness of his wife, and has returned to the Pacific Coast.——Dr. George E. Baxter was held up and robbed of a gold watch and a small amount of money, September 12.——Dr. and Mrs. Julien E. Hequembourg have returned after a month's trip to the Pacific Coast.

Deaths of the Week.—During the week ended September 13, 548 deaths were reported, equivalent to an annual mortality rate of 13.94 per 1,000. The deaths for the preceding week were 515, and for the corresponding week of 1905, 514. Among the important death causes were: Acute intestinal diseases, 110; consumption, 55; Bright's disease, 43; heart disease, 41; violence, including suicide, 39; cancer, 34, and pneumonia, 30.

INDIANA.

Hospital Contracts Let.—The trustees of the Indiana Village for Epilepsy awarded the contracts for the first buildings to be erected on land recently purchased by the state at New Castle for $14,195.——The contract for building the Southeastern Indiana Hospital for the Insane, Madison, has been awarded at a price of $1,165,885.

Physicians Ill.—Dr. R. W. Martin, Washington County, was removed from his apartments at Lake James to the Wood Hospital, Angola, for the treatment of pulmonary abscess. He is in a critical condition.——Dr. Edward L. Elrod, Henryville, underwent operation September 5 for appendicitis at the Norton Infirmary, Louisville, and is recovering.

Personal.—Dr. Robert H. Ross, Cassville, has been appointed a member of the Howard County Council.——Dr. Albert C. Yoder has been elected secretary of the Goshen Board of Health.——Dr. Chester C. Funk has been elected secretary of the newly organized New Albany Board of Health.——The new board of health of Terre Haute met September 7 for organization and elected Dr. Thomas W. Moorehead president and Dr. Myron A. Boor, secretary.

Medical Colleges Open.—A mass meeting of the students of the Indiana Medical College and the medical department of Purdue University was held September 5 and constituted an informal opening of the fall term of the school. About 100 students were present, and Drs. Henry Jamison, Frank B. Wynn, Edwin F. Hodges, John F. Oliver, Albert E. Sterne, Theodore E. Potter and Alembert W. Brayton addressed the meeting.——The State College of Physicians and Surgeons, in affiliation with Indiana University, opened for regular work September 5, with 40 present. No formal exercises were held. An informal reception for the students was held September 5 in the college building, at which speeches were made by the president of the University, and Drs. Allison Maxwell, B. G. Myers, John F. Barnhill and James H. Ford.

MISSOURI.

Must be Vaccinated.—The board of health of St. Joseph has requested the school board to require all pupils to present certificates of vaccination before entering school.

Milkmen Fined.—Eight St. Louis milkmen were fined, September 12, for selling impure and adulterated milk. Two of these paid fines, one of $50 and the other of $25. The remaining six cases were appealed.

Impetigo, Not Leprosy.—Investigation of the case of supposed leprosy reported to the St. Louis board of health a few days ago, reveals that the case was one of impetigo contagiosa, and that the diagnosis of leprosy was erroneous.

Auditorium Dedicated.—The new auditorium of the St. Louis Medical Society of Missouri, erected at 3523 Pine Street as a permanent home for the society, was dedicated with appropriate exercises, September 15. A full report will appear in next week's issue.

Addition to Hospital.—The board of managers of the Martha Parsons Free Hospital for Children are making an addition to the hospital building of a new wing, to contain several private rooms, two new bathrooms, a reception-hall and dispensary. The addition is to cost about $4,000.

Opens for the Year.—On September 6 the Medical Society of the City Hospital Alumni of St. Louis opened for its winter session by holding a meeting in the clinic-room at the City Hospital. The following officers were elected: President, Dr. Louis H. Behrens; vice-president, Dr. Walter C. G. Kirchner; secretary, Dr. Fred J. Taussig, and treasurer, Dr. Jules M. Brady.

New Quarantine Hospital.—Plans for a new quarantine hospital for St. Louis, to be erected below Jefferson Barracks, to cost $75,000, have been completed by the board of public improvements and referred to the proper committee. The building as proposed is to be constructed of brick and concrete, is to be 160 by 56 feet, and two stories in height with a basement, and is to furnish accommodations for 200 patients.

Physicians in Trouble.—Dr. Harrison Fitzgerald, St. Louis, was fined $10 and costs, for an alleged assault on Mrs. Letitia Landers.——"Dr." Charles De Meyer was fined $100 for practicing without having registered his license with the board of health. This is the ninth conviction which the St. Louis Medical Society has obtained, and nine licenses have been revoked as the result of this crusade of the society.——Warrants have been issued for the arrest of six physicians of Kansas City, who are charged with failure to report births within ten days, as required by the local ordinance.

Untidy Restaurants.—The Kansas City board of health has had printed a yellow card, to be posted in prominent places in restaurants where unsatisfactory sanitary conditions are found. These placards, posted by the local board of health, can not be removed without the authority of the board. The placard reads as follows:

CONDEMNED.

The kitchen in this restaurant is conducted in a dirty and insanitary manner. Food prepared in this condition is dangerous to health.

BOARD OF HEALTH.

St. Elmo Sanders, Sanitary Superintendent.

Personal.—Dr. T. Casey Witherspoon, St. Louis, is about to move to Butte, Mont.—Dr. Charles G. Geiger, St. Joseph, was assaulted by three men, August 29, while going to his residence, and suffered severe contusions.—Dr. George O. Coffin, Kansas City, returned September 2, after a five-months' tour of Germany.——Dr. E. L. Dorsett has been appointed junior assistant physician of the City Hospital, St. Louis, and Dr. Arthur L. Rohlfing has been appointed a vaccine physician of the city dispensary, St. Louis.——Dr. J. Val Koch, St. Louis, late house physician at the Emergency Hospital, has accepted a position as medical examiner in the service of the Burlington System, with headquarters at Burlington, Iowa.

NEW YORK.

Typhoid.—An epidemic of typhoid fever is said to have broken out in the eastern portion of Cortland.

Personal.—Dr. Eugene A. Smith, Buffalo, has returned from Europe.——Drs. Edward J. Meyer, Burt C. Johnson and William H. Mansperger, Buffalo, have gone to Newfoundland.——Dr. Hilton J. Shelley has been elected president; Dr. A. C. Santee, vice-president; Dr. J. La T. Hanmer, secretary, and Joseph B. Hulett, treasurer, of the Middletown Physicians' Club.——Dr. Floyd B. Parke, Elmira, slipped and fell while on a fishing trip near Smithboro. Although he is said to have broken a "bone in his neck," he does not show any evidence of spinal injury.——William S. Cheesman, Auburn, was thrown from his bicycle in a collision with a delivery wagon, August 30, and suffered severe contusions of the foot, and a possible fracture of one or more bones of the ankle.——Dr. Robert Knight, Seneca Falls, has been appointed coroner of Seneca County to fill the vacancy caused by the removal of Dr. Hubert Schoonmaker.——Dr. George McCombs, Frankfort, is ill at St. Luke's Hospital, Utica.

New York City.

A Short Milk Supply.—There is a shortage in the city's milk supply and it is becoming evident that the supply available for New York is unequal to the demand. The price has gone up with the shortage.

Investigation.—An investigation has been ordered into the death of a child, who died in the Children's Hospital, Randall's Island, September 7, from scalds received in a bath tub. The nurse in charge of the ward, it is said, has been discharged for neglect of duty and gross carelessness.

Trachoma on the Increase.—Commissioner of Immigration Watchorn claims that there are as many as 10,000 cases of trachoma among the aliens of this city. It is pointed out that the health board is doing a wonderful amount of good with its school inspectors in finding these cases and advising treatment by the family physician or others.

Infant Mortality.—The mortality among children under 5 years of age in 1881 from diarrheal diseases was 33.3 per 1,000; in 1905 it was 14.9, while this year it is believed that it will be even lower. This is considered a glowing tribute to the efforts of the 31 health inspectors who are inspecting the city's milk and removing that great menace to infants, filthy food.

Rabies Epidemic.—Dr. William L. Wheeler of the Pasteur Institute has declared that there is at present an epidemic of rabies in New York and vicinity and that the disease has not yet run its course. About 400 cases have been treated at the Pasteur Institute and by the board of health since January 1, and as many patients, it is said, have been under private treatment.

Personal.—Dr. and Mrs. Leonard Corning arrived from Europe on the *Oceana*, September 14.——Dr. James E. Kelly is under treatment in Bellevue Hospital for severe scalds of the leg received while on board his yacht, August 28.——Dr. Charles A Gordon, interne at St. Catherine's Hospital, Brooklyn, has resigned to take up private practice. On September 3 the members of the house staff tendered the doctor a complimentary dinner and presented him with a set of surgical instruments.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending September 1, 374 cases of tuberculosis, with 148 deaths; 149 cases of diphtheria, with 8 deaths; 94 cases of typhoid fever, with 20 deaths; 44 cases of scarlet fever, with 6 deaths; 41 cases of measles, with 3 deaths; 26 cases of whooping-cough, with 15 deaths; 3 cases of cerebrospinal meningitis, with 6 deaths; 12 cases of varicella and 3 cases of smallpox, a total of 746 cases and 206 deaths. There were reported to the sanitary bureau for the week ending September 8, 329 cases of tuberculosis, with 168 deaths; 149 cases of diphtheria, with 16 deaths; 139 cases of typhoid, with 13 deaths; 54 cases of measles, with 3 deaths; 46 cases of scarlet fever, with 3 deaths; 30 cases of whooping-cough, with 9 deaths; 10 cases of cerebrospinal meningitis, with 12 deaths; 9 cases of varicella and 2 cases of smallpox, a total of 744 cases, with 224 deaths.

OHIO.

Milk Licenses Revoked.—On September 4 Health Officer Friedrich of Cleveland revoked the licenses of five milk dealers on the grounds that their premises were insanitary.

Personal.—Dr. and Mrs. John G. Keller, Toledo, sailed from New York September 6, for Germany.——Dr. A. B. Gudenkauf, Sidney, has completed his term as senior interne at the Protestant Hospital, Columbus.——Dr. Myron J. Ewing and family, Findlay, have moved to Oregon.——Dr. and Mrs. George W. Ryall, Wooster, have returned from Europe.——Dr. Samuel A. Conklin, Canton, has gone to California.——Dr. and Mrs. Nathan S. Everhard, Wadsworth, have returned from Europe.

Ill and Injured.—Dr. Charles A. Lerch, Wooster, has entered a hospital in Cleveland for treatment.——Dr. John H. Criswell, representative to the legislature from Marion County, is critically ill at his home in Marion, as the result of a recent fall down the state house steps.——Dr. Charles W. Counts, Troy, was examined for insanity, September 3, and committed to the state hospital.——Dr. Edward W. Walker, Cincinnati, who has been dangerously ill with renal lithiasis, is reported to be improving.——Dr. J. T. Frawley, Dayton, for several years demonstrator of anatomy at the Western Reserve University, Cleveland, who has been ill for several weeks at St. Elizabeth's Hospital with nervous disease, has been taken to a sanitarium in Indianapolis for treatment.

OREGON.

Typhoid at Camp of Instruction.—It is reported that typhoid fever is now prevalent at the camp of instruction, American Lake, and that the government has been obliged to take radical measures for the suppression of the epidemic

Hospitals.—St. Mary's Hospital, Albany, was dedicated September 9 with impressive exercises, in which Dr. Harry Lane, mayor of Portland, and others participated.——A new hospital is to be built at The Dalles, to cost about $20,000. It will be known as The Dalles Sanitarium.

Personal.—Dr. Frank Cauthorn, Portland, is going to Mexico to assume charge of the work of the Interoceanic Railway of Mexico, with headquarters at Puebla.——Dr. F. E. Slater, Salem, has been appointed physician of the Omaha and Winnebago Indians in Nebraska.——Dr. Francis J. Hall, Portland, sailed from San Francisco, September 4, on his way to China.

PENNSYLVANIA.

The State Society Meeting.—At the business meeting of the Pennsylvania State Medical Society in Bedford Springs, September 12, it was voted that the society should meet in Reading in September of next year. The following officers were elected: President, Dr. Isaac C. Gable, York; vice-presidents, Drs. Charles H. Emmerling, Pittsburg; William B. Ansley, Saltsburg; Philip R. Koons, Mechanicsburg, and Henry M. Neale, Upper Lehigh; secretary and editor, Dr. Cyrus Lee Stevens, Athens (re-elected); assistant secretary, Dr. Theodore Appel, Lancaster; treasurer, Dr. George W. Wagoner, Johnstown (re-elected); trustees, Drs. David H. Strickland, Erie; William S. Ross, Altoona, and John B. Donaldson, Canonsburg; delegates to the American Medical Association, Drs. Adolph Koenig, Pittsburg; Israel Cleaver, Reading; William T. Williams, Mount Carmel, and Samuel Wolfe, Philadelphia. The last day of the meeting was one of the most interesting sessions that was held. Dr. Samuel G. Dixon, state commissioner of health, delivered an unusually interesting address. He reviewed the work of the new state health department, which is one year old. Prior to the establishment of the board of health, he said that half the boards of small towns existed in name only. In 1,547 townships no permanent health organization has been provided for, so that one year ago he claims 3,500,000 people in the state were without any local protection to life and health. Every effort has been made by the new department to establish health boards where none previously existed, and at the same time to stimulate the activity of those boards whose work had been neglected. The report cards and blanks were furnished the different health boards throughout the state in October, 1905, and disregarding the reports received for the fractional part of that month, a total of 71,254 cases of communicable diseases was reported for the nine months ending Aug. 1, 1906, an average of 7,917 per month. A daily report sheet is made of all rural cases, and following this, advisory and precautionary circulars are addressed to the householders concerning the sanitary management of cases of typhoid fever, scarlet fever, diphtheria and other communicable diseases. Dr. Dixon said it is his intention to provide health officers for all townships, whose duty it will be to keep their districts clean. Since the establishment of the new department 500 diphtheria distributors have been located throughout the state. The collection of birth and death certificates began Jan. 1, 1906. During the six months ending July 1, a total of 60,839 death certificates and 71,596 birth certificates had been received. He recommended means of preventing the pollution of the drinking water throughout the state. After the address of Dr. Dixon, three sections of the society adopted a resolution that the organization of the state department of health as reported, and its method of procedure in educating the public and enforcing existing laws, be heartily endorsed, and that an expression of appreciation be given for the excellent results already achieved and the unanimous cooperation of this body be vouchsafed. The report of the meeting will be continued next week.

No Vaccination, No Studies.—According to an opinion by Attorney-General Corson, the pupils in private schools in this state are in precisely the same position in the matter of vaccination as those in public schools. They must be vaccinated. The law, he states, is binding on the teachers, principals and superintendents of all schools, public, private, parochial, Sunday or other schools.

Philadelphia.

Personal.—Dr. James A. Kearney has been appointed on the ophthalmological staff of St. Agnes' Hospital.——Drs. Ernest Laplace, George F. English, Gordon M. Christine and Howard E. Hopkins have returned from Europe.——Dr. and Mrs. Lewis Ziegler have returned from a three months' tour of Europe.——Dr. John D. McLean sailed for Europe, September 14.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTIONS.

Barnard, A. F., St. Marys, Ga. ..... $ 1.00

SOCIETY CONTRIBUTIONS.

Chartiers Valley (Pa.) Physicians' S. and P. Association 50.00
Newport County (R. I.) Medical Society 4.00
Washington County (Pa.) Medical Society 25.00

Allegheny County (Pa.) Medical Society, $733.00:

Allen, Charles W.	$ 5.00	Marshall, W. N.	$10.00
Allison, R. W.	5.00	Matheny, A. R.	2.00
Ankrim, L. A.	5.00	Mathewson, F. W.	2.00
Behan, R. J.	2.00	Mathiot, E. B.	5.00
Billings, F. F.	2.00	Mayer, Edward B.	5.00
Bryant, W. C.	5.00	Menzalora, Marion	2.00
Burke, John G.	2.00	Mercur, William H.	10.00
Burroughs, H. S.	5.00	Milligan, Robert	5.00
Cash	25.00	Milligan, S. C.	5.00
Chesarown, A. V.	5.00	Montgomery, E. S.	5.00
Clark, H. E.	2.00	Morris, A. F. B.	2.00
Clarke, Robert G.	5.00	Morrison, Robert	10.00
Conti, G.	5.00	Moyer, I.	5.00
Cook, Charles B.	5.00	Murdoch, F. H.	5.00
Daggette, A. S.	2.00	McAdams, William J.	5.00
Davis, F. M.	2.00	McClymonds, H. S.	5.00
Davis, William McC.	2.00	McGeary, W. J.	5.00
Day, E. W.	5.00	McGraw, E. B.	5.00
Diller, Theo.	10.00	McKennan, T. M. T.	10.00
Disque, T. L.	10.00	McKinnon, C. L.	5.00
Donaldson, Walter F.	3.00	Neeley, E. E.	5.00
Drangs, Amelia A.	2.00	Nef, E. L.	5.00
Duncan, A.	2.00	Nettleton, D. E.	5.00
Duncan, J. L.	2.00	Newlin, H. S.	5.00
Eaton, P. J.	10.00	O'Brien, W. D.	2.00
Elterich, T. J.	5.00	Pershing, F. S.	5.00
Emmerling, Charles	5.00	Pettit, Albert	5.00
Evans, Edward E.	3.00	Phillips, J. S.	10.00
Ewing, William B.	5.00	Pierce, A. M.	2.00
Ewing, Wm. H.	5.00	Pool, S. N.	5.00
Foster, C. S.	2.00	Reynolds, J. Hervey	5.00
Foster, W. R. and J. S. DeMuth	20.00	Ritz, J. F.	2.00
Foster, William S.	25.00	Ritchie, M. Delmar	5.00
Gaub, Otto C.	5.00	Robeson, W. F.	3.00
Goldsmith, Milton and Luba	2.00	Robinson, W. H.	5.00
Grayson, T. Wray	3.00	Russell, J. M.	5.00
Hagemann, J. A.	5.00	Sadowski, Leon	5.00
Haworth, E. B.	5.00	Sahm, W. K. T.	5.00
Hays, George L.	5.00	Sances, K. I.	10.00
Hazzard, Thomas L.	5.00	Sankey, T. M.	5.00
Heckel, E. B.	5.00	Silver, David	2.00
Henderson, W. L.	10.00	Simonton, Thomas G.	2.00
Hinchman, W. A.	5.00	Simpson, F. F.	5.00
Hirsch, Leon	5.00	Small, Edward H.	10.00
Hoffmann, Joseph H.	5.00	Soffel, August	10.00
Holt, J. Floyd	10.00	Spire, M.	2.00
Huselton, W. S.	15.00	Steim, Charles J.	5.00
Irish, William B.	2.00	Stewart, R. W.	25.00
Jackson, C. M.	5.00	Stewart, W. J.	10.00
Jackson, J. M.	2.00	Stieren, Edward	2.00
Johnston, James I.	2.00	Stillwagon, Charles A.	2.00
Köller, F.	5.00	Stuart, E. C.	10.00
Lichty, John A.	5.00	Thorne, J. M.	5.00
Lippencott, A. A.	20.00	Todd, Frank L.	2.00
Litchfield, L.	2.00	Voigt, Charles H.	25.00
Lyon, A. K.	5.00	Walton, L. S.	5.00
Knox, William F.	5.00	Wechsler, B. B.	5.00
Koenig, Adolph	5.00	Welsser, Edward A.	5.00
Mahon, John S.	10.00	Werder, K. O.	25.00
Macrum, Robert S.	3.00	Wolf, Jacob	5.00
		Zeller, Albert T.	5.00
		Zugsmith, Edwin	2.00

Total	$ 813.00
Previously acknowledged	13,130.00
Grand total	$13,943.00

GENERAL.

Railway Physicians Meet.—At the annual meeting of the Pacific Association of Railway Surgeons, held August 23, in San Francisco, the following officers were elected: Dr. Frank K. Ainsworth, San Francisco, president; Drs. W. A. Magee, San Diego, and William H. Hood, Reno, Nev., vice-presidents; Dr. James P. Dunn, Oakland, secretary; Dr. Frank L. Adams, Oakland, secretary, and Dr. Aaron Schloss, San Francisco, member of the executive committee.

FOREIGN.

Nostrums Evade Laws.—The president of the German *Apotheker-Verein* has called the attention of the German customs house authorities to the way in which the regulations are evaded in respect to certain secret and fake medicines whose importation and sale are forbidden in Germany. They are sent by mail from other countries directly to private customers.

Plague in India.—Consul-General Michael, Calcutta, states that plague has appeared in epidemic form at Verawal, in the Bombay presidency. He states that the prevalence of plague in India is local and that the impression general in western

countries that all India is infected is erroneous. For example, in the Bombay presidency and Sind, the section of India which is most affected, only 19 districts, and states and towns out of 108 are reported infected, and of the 19 places 15 furnish cases running from one to eleven.

Medical Bequests from a Physician.—The former professor of legal medicine and toxicology at Montpellier, France, Dr. Jaumes, who died recently, aged 72, made the medical faculty his universal legatee. A fund producing an income of $1,200 was left to found a chair of general pathology and therapeutics, and a prize in legal medicine was also endowed in both the medical and law departments. Another fund representing an income of $2,000 was left in charge for an aged relative, at whose death it reverts to the medical faculty, and $6,000 was presented to the local medical and other scientific societies.

Subscriptions for Schaudinn's Widow.—Committees have been organized in England, as well as in Germany, to solicit subscriptions toward a fund to be presented to the widow of the recently deceased young scientist, Fritz Schaudinn. Although only 35, his name is world famous from his discovery of the spirochete connected with syphilis, and this discovery had been preceded by several others of epoch-making importance in various fields of zoology, especially in the study of protozoa, sporozoa and hematozoa. He succumbed to the effects of an abscess in the pelvis June 22, as was duly chronicled in these columns at the time.

Fifth International Conference on Tuberculosis.—This assemblage convened at The Hague September 6. One of the chief subjects discussed was "Channels of Infection," and among others, Calmette of Lille reported the interesting conclusions of his research in this line. A brief summary of his work will be found on page 972 in this issue. He has found that not only tubercle bacilli, but also insoluble particles of mineral dust and pneumococci are able to pass promptly through the intestinal wall without leaving a trace of their passage, and are carried by the leucocytes to the lung. The accumulations in the lung afterward are more extensive than when the substances are inhaled directly into the air passages. A number of Americans were given a prominent part on the program, and their communications still further emphasized the importance of the work being done in this country.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 31, 1906.

The Liverpool School of Tropical Medicine.

In view of the alarming nature of the recent reports with regard to the spread of sleeping sickness in Africa and of the fact that an expedition organized by the Liverpool School of Tropical Medicine has been studying this disease for three years in the Congo, Sir Alfred Jones, president of the school, requested an audience of the king of the Belgians in order to confer with him on the subject. Recently the king offered a prize of $40,000 for the person who should discover a remedy and placed a credit of $60,000 in the Congo estimates for the purpose of prophylactic research. He granted the request of Sir Alfred Jones and received a committee from the Liverpool school, which included the president, Prof. Ronald Ross, Professor Boyce, Dr. J. W. W. Stevens, Dr. J. L. Todd and Dr. Evans. The king gave a most attentive hearing to their views on the necessity of preventing the further spread of sleeping sickness. He agreed with Sir Alfred Jones that the question is one of international importance and said that as far as he is concerned he is prepared to do all in his power to relieve both the white and black population from this terrible scourge. He asked the Liverpool school to submit to him a scheme for the prevention of the disease, which will be done as soon as possible. He promised his coöperation if it is in any way feasible or practical. He expressed in high terms his appreciation of the energetic work now being carried on by the school and of the thorough manner in which its expeditions are worked. To show the value he placed on that work he bestowed the Order of Leopold on Professor Ross, Professor Boyce, and Dr. J. L. Todd, the last of whom worked on trypanosomiasis in the Congo Free State for three years.

The Diminishing Use of Alcohol in Hospital Treatment.

Sir Victor Horsley's statement at Toronto that alcohol is being rapidly superseded by milk in London hospital treatment is well borne out by accounts of Guy's Hospital. Not only is the general bill for alcoholic liquors diminishing, while the number of patients is increasing, but the beer bill is actually disappearing. Last year, when there were 8,626 inpatients under treatment, the expenditure on malt liquors was £8 12s 6d. In 1896, when there were 2,000 fewer patients, the bill was double this sum. So small is the amount of beer consumed at Guy's that for the first time in the memory of the management it has been considered not worth while to order the drink by the barrel and bottled beer has been substituted. The hospital patients are now consuming 100 gallons of beer whereas five years ago they consumed 512 gallons. At one time beer was considered an ordinary part of the patient's diet. That idea has now disappeared. The quantity of wines and spirits consumed shows a similar reduction.

The Anti-Malarial Campaign in the Federated Malay States.

The measures taken against malaria at Port Sweetenham, in the Federated Malay States, have been previously reported in THE JOURNAL. Dr. Hamilton Wright now reports great success. The port was designed by the government to replace that of Klang, on the upper tidal reach of the river of the same name. Port Sweetenham was jungle covered, flooded daily by tides and had an average rainfall of about 100 inches yearly. The district was a center of the worst forms of malaria. On the formal opening of the port Klang was abandoned and the river closed to sea-going vessels. Severe malaria immediately broke out among the officials and coolies employed on the railway and shipping. A commission was appointed, consisting of doctors, railway and works officials, to devise measures for the suppression of malaria and for the general sanitary improvement of the port. The recommendations of the commission involved an outlay of from $50,000 to $60,000 and were at once accepted by the government. The new port was dyked, drained, leveled and cleared. Since these measures were carried out there has been scarcely a case of malaria, and instead of being an unhealthy and shunned swamp, the port has become a desirable billet.

The Lot of the East End Doctor.

The onerous conditions of medical work in the east end of London are illustrated by the following advertisement which has appeared in the *Times:* "An east end medical man, B. A. (Cantab.), who has never had a day's holiday or a Sunday's rest since he has been in practice, and who has not sufficient capital to purchase a more comfortable living, would like to change his profession. He has taken honors in science, so judges himself capable of filling a post as analytical chemist. Having good credentials and references, he hopes that manufacturing firms, etc., will give his advertisement consideration."

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Aug. 28, 1906.

The Report of the Metropolitan Board of Health.

The annual report of the board of health of Vienna was issued a few days ago and gives a good insight into the interesting changes taking place in the capital, viewed from a medical standpoint. The area covered by the city is about 120 square miles, and the population for 1905 was 1,900,000. The number of medical practitioners was 2,500 active and about 500 not strictly practicing doctors (dental surgeons, hospital staff and purely scientific workers). The hospitals belonging to the state number 11, with about 6,000 beds, besides numerous asylums and children's homes. The number of the in-patients in state hospitals was upward of 60,000, and the number of out-patients was nearly a million and a quarter. The mortality rate in Vienna shows a constant though slight decline, and stands now at 18.7 per thousand. Tuberculosis in all forms is responsible for fully 15 per cent. of all deaths; it gives rise to the sad name of morbus Viennensis. In all other respects the mortality has been lowered with the exception of (perhaps) cancer, which is constantly increasing; perhaps the more definite means of diagnosis is responsible for this increase. The infant mortality was pretty high in some poor districts, but as a rule it hardly exceeded 160 per thousand. This compares not unfavorably with the figures for France, England and Italy. Not a single case of smallpox has been brought to the notice of the board for two years, and the last case seen in Vienna had been imported from Italy by a railway laborer. It is strange enough, that in the city where Kaposi once could make his famous studies on the histology of smallpox eruptions, 35 years later the young dermatologists have to study the disease from pictures and casts, from lack of actual cases. Compulsory vaccination has effected this change. The decline in diphtheria mortality is continuously noted in all cases in private and hospital practice. Two severe epidemics of measles, with a mortality of 8 per cent., and of influenza of the gastrointestinal type with complications in the middle ear, were noted during 1905, otherwise the year was singularly uneventful. The ratio of births was 1 in 950, and the annual increase of the population was 2.2 per cent.

Pharmacology

State Universities and the Public Health.

As will be seen by the following account, copied from the *Bulletin of the Kansas State Board of Health*, vol. ii, No. 7, the School of Pharmacy of the Kansas State University is making an examination of proprietary remedies when requested to do so by the Kansas State Board of Health. This is interesting and gives promise of better things. The departments of pharmacy and chemistry of state universities, supported by state funds, should do their share toward supplying information in regard to the composition of the many remedies proposed for use in the treatment of disease. In the past, these schools and departments have been restricted in their work because of insufficient appropriation, but now that the need of better protection of public health is being appreciated, as is indicated by the enactment of a national pure food and drug law, there should be little difficulty in securing more liberal support; especially, since the passage of this law has made it essential that each state establish control of foods and drugs manufactured for consumption within its boundaries.

The following is the report referred to:

"Several weeks ago a tragedy occurred near Ellinwood, in Barton county, which emphasizes the necessity of a curb on 'The Great American Fraud.' A letter from a physician in Ellinwood gives the pathetic facts in the case:

"'Louise Closen, aged sixteen months, while playing, secured a bottle containing tablets called "Vesitone," which an older member of the family was taking for bed-wetting. Her father does not know how many tablets were taken by the baby, but he thinks less than ten. Ten minutes after taking the medicine, the child became rigid in every muscle. The father gave it three-quarters of a teaspoonful of Winslow's Soothing Syrup. Two or three minutes later the father attempted to induce vomiting by giving salt-water and mustard, but did not succeed. The child was apparently unconscious from fifteen minutes after taking the tablets. A slight tremor was present during the whole time. Ten minutes after dying the spasm relaxed somewhat. The child died forty-eight minutes after taking the medicine.'

"The vesitone was sent to Professor Sayre of the State University for analysis, which is herewith submitted for the information of the public:

"'The report of analysis of a remedial agent sent us by the secretary of the State Board of Health, which was labeled as follows: "Vesitone for a Certain Cure of Kidney and Bladder Weakness, etc., manufactured by the Union Medical Company, Edwardsburg, Mich." The question by the secretary regarding this was: "Does the medicine contain poisonous ingredients?" Our examination shows that the tablets contain about one-twelfth grain of alkaloidal material in each tablet, of which a fair proportion is strychnin.'

"The following is taken from the wrapper, which sets forth the remarkable virtues of this nostrum:

"'It is a combination of a simple and harmless vegetable or herbal remedies that affects in a most wonderful manner the changes desired. Its action is directed so singly and directly to the affected organs that the cure is swiftly and surely accomplished without any shock whatever to the intricate organism of the most delicate child. It achieves its most marvelous results from the fact that it repairs and builds up the affected parts and organs in precisely the same way that they were weakened and broken down by the disease. The ingredients are so carefully chosen and so scientifically blended that there is absolutely no superfluous action, no organ is unnecessarily affected, and there is no irritation whatever from its use. In other words, it acts like a perfect antidote to the disease.'

"This statement, no doubt, was the occasion of the carelessness on the part of the parents in placing the remedy where the child might get it to play with. If this had been properly labeled, as containing a dangerous alkaloid, the parents would probably have exercised all necessary precaution to place it beyond reach of the little one.

"The coming legislature should enact a law compelling the manufacturers of all proprietary nostrums containing poisonous drugs to have the same distinctly set forth on the label, in order that people may be advised what they are taking. The coöperation of the physicians of the state is urgently requested in putting through a measure of this kind."

Character of Medicines Dispensed by Physicians.

The *Western Druggist*, in an editorial in the August issue, calls attention to the fact that though pharmacists are required by law to dispense drugs of a recognized strength and efficiency, there are no restrictions on physicians, who may dispense any and all remedies which they see fit to use. The editorial directs attention to the condition of affairs in Indiana, stating that it is an ideal state for the enforcement of laws in regard to pharmacy, because of the concentration of everything pertaining to medicine, food, hygiene and sanitation under one board and practically into the hands of the secretary, who has absolute jurisdiction over about 600 employés, unhampered by any political considerations. It then goes on to state that over one-half of the physicians in Indiana dispense their own medicines; that too often they procure their supplies from whomsoever will sell them most cheaply, and that nearly every city has one or more "fly-by-night" concerns, which, in order to get trade, undersell other dealers and often sell pharmaceutical preparations, such as elixirs, syrups, pills, etc., for less than the wholesale cost of the materials. Necessarily, the articles supplied by such concerns are liable to be below standard and could not be dispensed by a pharmacist without danger of prosecution and fine. An instance is quoted in which a physician had been giving a patient teaspoonful doses of a tincture of opium which he had purchased from one of these houses—the preparation probably being a weak solution instead of a reliable tincture—on giving the patient the same dose of a standard tincture of opium purchased from a druggist, opium poisoning resulted and the patient nearly died. This forcibly demonstrates, the drug journal says, that dispensing physicians as well as pharmacists should be required to use drugs of standard strength to obviate the danger to patients resulting from inaccuracy in dosage.

We are forced to acknowledge that there is much truth in the drug journal's comments. If physicians dispense their own medicines, they should be certain that what they use are reliable and of standard strength. As they are not able to test the preparations themselves, there is only one way by which physicians can have confidence in the preparations, and that is by obtaining them from reliable houses. But from recent developments, it would seem that it is not always easy to tell what houses are reliable. This much, however, must be admitted: Those concerns whose only claim is low prices for their products are not, as a rule, to be depended on. But if we mistake not the druggist is as likely to buy where he can cheaply as is the physician.

Whose Fault?

A certain pharmacist in San Francisco was, like so many others, burned out by the fire in April, relates the *California State Journal of Medicine*. He resumed business before the smoke had blown away, but on entirely new lines. He decided to run his store, for at least six months, as a purely prescription pharmacy, consigning nostrums, "patent medicines" and sundries to the outside place where they belong. His experience is most interesting. Within the first week a prescription for "antikamnia" was presented. It came not from a quack, nor from an infant in the profession, nor from an ignoramus, but from a physician of some standing in the community! Probably there has never been a more disgracefully but consistently dishonest and fraudulent nostrum foisted on our profession than this deadly "antikamnia," yet here is a physician, presumably a self-respecting gentleman, who continues to help along the fraud! And there were others as ignorant or as lazy who "prescribed"—forgive us the word—other nostrums, to the discouragement of the pharmacist who wanted to do the right. One day a woman came in with a prescription; it was filled and given her, but before leaving she asked for a bottle of a nostrum once popular with a certain class of physicians. Some kind friend had doubtless recommended it, and thus she was aiding (?) the physician. So it went until the shelves of the "prescription pharmacy" look about as much like a department store as though the effort for decency had never been made. The attempt to be clean and decent was defeated by the very men who should have supported it—the physicians!

Correspondence

The Attacks on the American Medical Association.

DETROIT, Sept. 14, 1906.

To the Editor:—As a contribution to a correct estimate of the criticisms in Association management, the following observations are presented:

1. There has always been criticism of the American Medical Association management, a criticism varying with its prosperity. In this it falls under the general law of powerful organizations. Someone is always ready, with a club, to hit the head of anyone who rises above mediocrity, so as to reduce him to the general level. Hence, no friend of the American Medical Association need be disturbed by wild criticism, criticism inspired by hostility to its fundamental principles.

2. The medical profession has never learned cheerful submission to the guidance of its leaders. Many are restive under any regulation essential to effective organization, criticising both the committees who make and the officers who enforce them. It seems an American characteristic to be "agin the givernment." Very slowly we are learning the value of medical organizations, and the necessity of meeting the conditions essential to their operation. Nor have we learned to follow any administration long without "kicking." We want change—without reason often—from the President of the United States down.

3. There is an obvious lack of faith, by many, in either the capability or honesty of such management. Grafters themselves, they suspect the management of using its opportunities to feather its own nest. But the vast majority, while not grafters, have suffered so much therefrom, that they are easily led to impute the worst motives to those outside their personal knowledge—hence many grades of criticism.

4. The business of the American Medical Association has grown to such enormous proportions that its success demands a concentrated administration. Twenty-six thousand members can not be consulted when a stock of paper is to be purchased or the weekly edition of THE JOURNAL mailed—one head must look after all subordinates, wherever working. He may gather about him a corps of councilors, in addition to those provided by the Association, but he must remain the head or be absolutely useless. To comprehend even a tithe of this business will tax the capacity of one who gives his entire attention thereto. Criticism not based on such intelligent grasp of the Association's business can hardly be classed among the valuable assets of a scientific person. Yet such criticisms are heard too frequently for the reputation of their authors.

5. The organization of the profession into a living unity presupposes a knowledge by each doctor of his place and work therein and his disposition to apply said knowledge. Little criticism of the management's shortcomings will be heard from those devoted to the cultivation of such knowledge and disposition, because all their energies are otherwise employed. The great need of our growing organization is "less talking, more thinking and doing."

6. The establishment of a "clearing-house for medical supplies of unknown composition," in the hands of a working board of acknowledged ability and integrity, has awakened widespread criticism from those whose illicit gains were endangered. But such criticism ought to rejoice every friend of scientific medicine, as it shows that the American Medical Association is committed to an oneness of thought and practice such as will command the world's respect. In this many confess that they "love the Association more for the enemies it has made."

7. In view of these and allied things, what answer can the management make to its critics? It can appeal to the standard of the great Teacher, "by their fruits shall ye know them." It can ask in what respect have we failed to bring forth in its season, each after its own kind? Never before in the world's history has a similar management exhibited results in any sense comparable with that of the American Medical Association—lack of space makes details impossible here.

8. Should outside members desire an investigation of the minute details of THE JOURNAL office, the management will welcome the same as an admirable means of answering unintelligent criticism.

9. Is it not possible to plan the general meetings so that all present may feel that they do just a little as a whole? Now each is a member of a Section, in which he may work as he pleases, but collectively, as individuals or sections, they are impotent.

10. Owing to the method of their selection, all members of the House of Delegates do not possess that peculiar knowledge or special training necessary to initiate wise moves for the good of the entire profession, hence its acts must be restricted to (a) selecting the management and (b) supporting its plans for the Association's prosperity. Thus the management, rather than the House of Delegates, is the tribunal to which new ideas relating to the Association should be presented. If it approves, the House of Delegates will confirm, and vice versa. This is the more important, as the management does business every day in the year, while the House of Delegates has only an ephemeral life of four days yearly.

11. Personally, I have found the management open to receive ideas from members, if presented in a helpful spirit, and ready to adopt them when convinced of their practical value. Hence it is suggested that each critic first present his criticism direct to the management, and later, if this fails, to the membership at large through the journals and societies.

It is hoped that all critics will follow the example of scientific students, viz., make sure they have made a real find in medical sociology by long study and reflection, ere bothering either the Association management or the medical public. So will the management have more time and energy to serve the Association, and the critic save his reputation as a careful student and logical thinker. LEARTUS CONNOR, M.D.

DETROIT, Sept. 11, 1906.

To the Editor:—Thanks for publishing my communication. The answer of Dr. Happel shows that it was justified. The elaborate answer brought out those very points that the members want to know, and will help to clear up the air, just as I intended it should. A few more explanations will satisfy everybody, and that is just what I want. The only objection I might have to Dr. Happel's answer is his repeated statements, when he compares our Association with a well-managed business. Ours is that to a limited extent. But our members are educated, intelligent beings, interested in every bit of work done, and have a right to know every detail and should not be compared with common, everyday stockholders of business institutions.

I still believe that the right way to conciliate "kickers" is to take the wind out of their sails, and open up everything, so that they can see the error of their views; in fact, that was my whole plea, my sole object. All members have the good of the Association at heart, but disagree about how to accomplish it. That is all. By a quiet, dispassionate discussion they will agree readily. Dr. Happel's answer contained a number of slightly ironical expressions at which I had to laugh. They are when he mentions Dr. Walker's name on several occasions. The fact is that Dr. Walker knew nothing about this communication, had absolutely nothing to do with it. I do not need inspiration from Dr. Walker or anybody else. "I paddle my own canoe." J. H. CARSTENS.

GREENVILLE, TEXAS, Sept. 10, 1906.

To the Editor:—I have just read Dr. Carstens' letter in THE JOURNAL, September 1, and wish to correct the statements made therein regarding the Walker resolutions. I do not know from whom Dr. Carstens could have gotten his impression that the Board of Trustees or the officers of the Association opposed the Walker resolutions. He certainly could not have gotten this idea from any member of the House of Delegates who was present at the time.

The moment the reading of the resolutions was concluded half a dozen men were on their feet (myself among the rest),

trying to make motions. Dr. Jackson of Missouri was recognized by the President and moved to lay the resolutions on the table. This motion was immediately seconded by at least a dozen different men (myself among this number), was put to vote and carried unanimously, without any discussion whatever. I do not think there were more than three or four of the Trustees in the House at the time. Those Trustees who were present had no time or opportunity to express themselves favorably or unfavorably, as the House voted the resolutions down at once without discussion.

I voted to table the resolutions: 1. Because Dr. Walker had misunderstood the President's address when he said in his preamble that preceded his resolutions that he (the President) had indicated that there was a sentiment of uncertainty and distrust relating to the management of THE JOURNAL and sundry other matters, when the President had clearly shown in his address that there was no such sentiment except among those who were being shown up by the work being done by the Association, to-wit, the "patent-medicine" people and those working for them directly. 2. Because I considered them unnecessary, uncalled for, and not only a reflection on the Board of Trustees, but an insult to the intelligence of the members of the House of Delegates. The report of the Board of Trustees showed that this body had done its work in accordance with the instructions of the House, and we had full and satisfactory reports before us, and at the time the Walker resolutions were offered the Trustees had just satisfied the most exacting member in this regard.

Any man of ordinary intelligence would know that the rumors and gossip regarding maladministration were put in circulation by those who have an interest in disrupting the organization and causing dissension in our ranks. There could be no excuse in the mind of any intelligent member of the House of Delegates for such an investigation, and the only conclusion which I have been able to come to regarding the object of these resolutions is that they were introduced with the expectation that they would be voted down, thus affording capital for further insinuations. Evidently they are being put to the use for which they were intended. The evident feeling of the House of Delegates was that the resolutions were intended for ulterior purposes.

That the delegates did not want to discuss the matter is shown by the fact that they voted the resolutions on to the table without a word of discussion or objection from any one. Even the author of the resolutions apparently had no desire to discuss or defend them. The attempt to show that the officers or Trustees of the Association opposed the adoption of these resolutions is absolutely contrary to the facts.

C. E. CANTRELL.

State Board Examination Statistics.

COLUMBUS, OHIO, Sept. 4, 1906.

To the Editor:—In the statistics published in the Educational Number of THE JOURNAL, Aug. 25, 1906, we note some errors that affect the standing of the Ohio Medical University.

In Table A, "Physicians Examined by the State Boards During the Calendar Year 1905," the Ohio Medical University is credited with three examinations in West Virginia, with one failure. The facts are, two graduates were examined there in 1905 and both passed. Joseph Nathan Freilich, who had been a student and failed of graduation, session 1904-05, registered as a graduate and failed to pass the examination.

In the same table the Ohio Medical University is credited with two failures in Ohio. The only basis for this is that two of our graduates who took the examination were refused certificates for an alleged infraction of the rules. Their papers graded respectively 89 and 84 per cent. They took the examination again in the fall, passed with creditable grades and were given certificates. There was no question at any time of a lack of educational qualifications and the fact of certificates being refused does not mean an educational failure. It is not so recorded in the records of the board.

We appreciate fully the difficulties that beset the compilation of statistics and, therefore, do not call your attention to these errors in a spirit of unkindness. We ask, however, that they be corrected and the Ohio Medical University be given her proper standing. Very truly,

JAMES U. BARNHILL, Chancellor.
W. J. MEANS, Treasurer.

[The figures published in the tables referred to are not "errors," as our correspondents state, but are exactly as reported to us by the examining boards. We can not go back of these reports.—ED.]

Miscellany

A State Board Examination Through a Frenchman's Eyes.—Dr. Ménager, a graduate of the Paris medical school, writes home entertainingly of his examination before the state board at Seattle, his communication being republished in the *Journ. de Méd. de Paris* for August 12. He had learned that the board would accept his replies written in French, on condition of his paying $15 for the necessary clerical work of translating. He relates that the candidates assembled in the "opera house," each with his diploma in a tin box under his arm, and the noise and commotion were indescribable. Finally, the jury took their places, each candidate took the oath, paid in $10 to the treasurer, and was informed in regard to certain formalities to get the rebate on his railroad ticket. A slip of paper with the questions was then handed to each one and they settled down to write. As places could not be found for all the candidates, the members of the examining board gave up their seats to them and sought places elsewhere. The president of the board took off his coat, as it was getting very warm, then his vest, and went around among the candidates in shirt sleeves and suspenders, and his example was gradually imitated by the other members of the board and finally by the candidates. This was such a contrast to the formality of such official examinations in France that the two French candidates could scarcely believe their eyes. Occasionally some of the members of the board or a candidate drank a glass of water from the Chamberlain filter in the center of the room, "always the same glass, there was only one!" "Oh, Parisian pontiffs," he exclaims, "where are the robes of state and the academic hoods!!" . . . "After each session the candidates themselves handed in their MS. to the secretary. Occasionally the president of the board would interpolate: 'Dear doctors, there is a vacancy for a physician at such a place; Dr. so-and-so wants an assistant; the widow of Dr. so-and-so wants to sell his office equipment; hotel so-and-so has reduced its rates for you doctors while you are here for this business; you will find good accommodations and a good table there.' Involutarily my memory recalled the formal professors of my days in France with new respect. They seemed very great and very dignified in comparison with the licensing board before me." . . . "The longer I live here, however," he adds, "the less I mind all this. Time is money here, and all the old-fashioned conventionalities take time, and they cut them out here." . . . "The members of the board shook hands with us all, promising a prompt decision, and in three weeks we received back our diplomas—for which they had given us a receipt—and the newspapers published the names of the successful candidates, about 75 out of the total 110. I ask myself whether France would have given so kindly a welcome to an American physician, not speaking French, and armed merely with his diploma from the medical school in Philadelphia, Baltimore or New York!"

Poisoning from Emanations of Phosphin from Commercial Ferro-Silicon.—The manufacture of a compound of iron and silicon by means of the electric furnace has acquired much importance in connection with the steel industries, and large cargoes are now transported from points at which water-power enables the electricity to be cheaply produced to the iron works at which the material is used. The following case of poisoning from this material was reported by P. Lehnkering, Duisburg, Germany, at the fifth annual meeting of the *Freie Vereinigung Deutscher Nahrungsmittelchemiker*, May, 1906: In March, 1906, a Rhine freighter car

ried a cargo of wine, soap and ferro-silicon (the latter about 35 short tons) from Mannheim to a point convenient to the Krupp works. The ship had apartments for the crew as usual in the bow and two other apartments aft. The forecastle and one of the cabins were completely protected by partitions from any emanations from the cargo, but the other cabin was located over that part of the hold in which the ferro-silicon was stored, and emanations therefrom were constantly being inhaled by two children occupying that apartment. The children (aged, respectively, 6 months and 2 years and 6 months) became ill and were confined to bed shortly after leaving Mannheim, suffering from giddiness and vomiting. Arriving at Duisburg, after two days' journey, the children were taken ashore and a physician consulted, who made a diagnosis of "meat poisoning." Both patients died the next day. The parents who were on the ship, but who did not remain continuously in the children's cabin, were affected with headache and dyspnea only. A postmortem was made on the body of the younger child. It is stated to have given indications of death by asphyxia, but no detailed information was furnished. Analysis of the material showed it to be crude ferro-silicon which was emitting phosphin, due to the fact that the casks containing it had been exposed to rain shortly before loading. The source of this phosphin is the calcium phosphid produced by the interaction of the phosphorus and calcium present as impurities in the materials used. From his experiments Lehnkering estimated that the total cargo could produce 851 gm. of the gas. Chemical tests of materials from the body of the child gave negative results, but indicated that death was not due to inhalation of either of the carbon oxids. Investigation developed several fatal cases in adults as well as children, and also some cases of death of cats and dogs. In the above-detailed incident, a canary that was in the children's cabin died about the same time. As this product is now in considerable demand and as its method of manufacture (electric) is liable to force its production at a point distant from its application, the danger of its emanations becomes an important matter in ship hygiene.

Keep Up the Fees.—The following is from the *California State Journal of Medicine:* "Just another word or two on the, to the insurance companies, tiresome subject of fees for life insurance examinations. In the first place, remember that our agitation out here is making history. Some of the insurance companies are referring, rather contemptuously, to the fact that 'California and one or two southern states are the only ones in the Union where the cut in fees has not been accepted' in abject silence—presumably, also, with gratitude that the companies are so generous as to pay the examining physician anything. They are howling about 'coercion' and 'trades-union' methods, and the iniquity of requiring that all members of a county medical society shall be required to live up to a certain fee schedule. They also talk about the sacrifice of independence, etc. Do not let many words and high sounding adjectives disturb your natural equanimity. When it comes down to brass tacks, the insurance company must admit that $5 is a small enough minimum fee; indeed, many of the companies have already admitted it. Perhaps some of you take the *Medical Examiner and Practitioner*, a publication primarily intended for insurance examiners. This publication preserved a discreet silence, so far as we could observe, on the very important subject of fees, until after the Boston session of the American Medical Association. Since then the two issues which we have seen contained a considerable amount of matter referring to fees. In the July number is an editorial so skilfully constructed that it may disturb the reader. It attacks the American Medical Association for taking up the insurance fee question, and (mis) states that the Association has entered into an agreement with the companies to recommend Dr. A. against Dr. B. Don't you believe it. The Association is working for the benefit of each and every one of us, and the object of the special committee on insurance which was appointed at Boston, is to secure the readoption of the minimum $5 fee. The journal quoted says that it protests against the Association's trying to force the trades-union idea down the throats of the medical profession. That is all pure buncombe, and the *Examiner* knows it. The Association does not force anything on the profession, or any portion of it. When the Association does anything, it is because the demand has come up to the Association through the county or state organizations. So with this fee question; a number of county and state organizations sent memorials to the House of Delegates at the Boston session, asking the Association to take some action; and the Association acted most conservatively by appointing a committee to confer with the insurance companies and to try to adjust the matter. It is the county societies that are agitating the question, and it is eminently right that they should do so. Who ever said that the fundamental idea of the trades-union was wrong? Who is forcing organization on the medical profession? It is not being forced at all; medical men are coming to their senses and realizing that cooperation is better than conflict, that is all. Stick to your demands for a minimum fee of $5, and do not examine for less; you will win out, if you will have a little patience."

Formaldehyd Disinfection.—D. Base has subjected to experimental investigation the various methods of generating formaldehyd gas for purposes of disinfection, with a view to determine the amount of gas present in the air of the room after the use of the same amount and strength of formaldehyd solution with the various methods. The experiments were made on a room practically, although not absolutely air tight, and on a summer's day when there was little wind. The air was drawn from the room through tubes containing potassium cyanid and the amount of formaldehyd estimated by determining the amount of cyanid remaining by precipitating with standard solution of silver nitrate and determining by titration the excess of silver nitrate. The results of the experiments (*Jour. Am. Chem. Soc.*, August, 1906), show that the various methods tested should be ranged in the following order so far as the amount of formaldehyd present in the air of the room is concerned:

1. Trenner-Lee retort. (Average yield, 46 per cent).
2. Autoclave. (Average yield, 42 per cent).
3. Permanganate-formalin, 300 gm. to 600 c.c. (Average yield, 37 per cent).
4. Sheet spraying. (Yield cannot be estimated).
5. Permanganate—diluted formalin in the proportion of 600 c.c. formalin, 300 c.c. water and 375 gm. permanganate. (Average yield, 32 per cent).
6. Kühn lamp, using 1,000 c.c. methyl alcohol as against 600 c.c. formalin in the other methods.

For simplicity and expedition, the permanganate-formalin method is preferable to all the others. Moreover, the quantity of formaldehyd gas can easily be increased by using more materials, which only requires a larger pail. The sheet-spraying method has the advantage of keeping up a steady supply of the gas so that the quantity at the end of twenty-two hours was only 2.75 per cent. less than that found ninety minutes after closing the room. Base quotes the conclusions of Werner (*Archiv. Hygiene*, 50, 305, 1904), as follows: 1. In all cases an average of 5 gm. of formaldehyd (absolute) per cubic meter (2.15 grains per cubic foot) should be present, with seven hours' action. 2. In exceptional cases, where loss of formaldehyd can not be avoided, or where numerous objects, or a good deal of matter of an organic nature which cannot be conveniently removed, are present in the room, the quantity should be doubled. 3. In all cases where the temperature is below 50° F., it should be raised; 68° to 77° F. is an efficient temperature. 4. The strength of the formalin should be known. Base's experiments indicated that there is danger of the formation of paraformaldehyd in the evaporation of formalin solutions which reduces the efficiency of some methods. On the other hand there is reason to think that the amount of moisture is a factor in the disinfectant action of formaldehyd, which is believed by some to settle in solution on the walls, furniture and other objects and to act in solution rather than in the form of gas. It is suggested that with the permanganate method more moisture might be introduced by the use of a tin or copper still. From the experiments of Base it appears that the amount of formaldehyd present in the air of the room was much lower than that required according to Werner, so that it is probable that the amount of material used in these experiments was too small for absolutely sure disinfection.

Marriages

CARL GROSCHNER, M.D., Toledo, Ohio, to Miss Frieda Schillinger of Detroit, September 4.

ROBERT CLYDE LYNCH, M.D., to Miss Amanda Cecile Genin, both of New Orleans, August 23.

SIDNEY J. EICHEL, M.D., to Miss Rose Bonn Reinhardt, both of Evansville, Ind., September 18.

HENRY J. PERRY, M.D., Boston, to Miss Winifred V. Freeman of Newark, N. Y., September 8.

OLIVER ANDERSON JEFFREY, M.D., Weiser, Idaho, to Miss Maud Jeffrey of Chicago, August 25.

HARRIETTE M. COLLINS, M.D., and William Arthur Lingham, both of Montrose, Colo., September 1.

JOHN A. CAVANAUGH, M.D., Chicago, to Miss Irene Cummings of Rock Valley, Iowa, September 12.

GEORGE W. LONGENECKER, M.D., Elsmore, Kan., to Miss Carrie L. King of Kansas City, Mo., August 13.

ROBERT GARDNER LORING, M.D., Boston, to Miss Susan Douglas Merritt of Springfield, Ill., September 6.

EDWIN STANLEY SCHARFF, M.D., Plaquemine, La., to Miss May C. Milliken of New Orleans, September 18.

CLARENCE B. NORCROSS, M.D., Clairton, Pa., to Miss Clara Campbell of West Elizabeth, Pa., September 5.

PHILIP MERRIMAN EGERT, M.D., Holland Patent, N. Y., to Miss Allie Adelia Clarke of Utica, N. Y., September 6.

NINA W. OLIVER, M.D., Lapeer, Mich., and Clifford S. McIntyre of Kalamazoo, at Walkerville, Ont., August 13.

ORIN RUSSELL WITTER, M.D., Hartford, Conn., to Miss Gertrude Louise Clinton Hunt of Chaplin, Conn., September 5.

ELBERT W. BLAKESLEE, M.D., Newport News, Va., to Miss Berkeley Ellyson of Norfolk, Va., at New York City, September 7.

Deaths

James H. Peabody, M.D. University of Georgetown, Washington, D. C., 1860; for many years a member of the American Medical Association; a charter member and once president of the Nebraska State Medical Association; some-time president of the Omaha-Douglas County Medical Society; a charter member of Omaha Medical College; emeritus professor of military surgery in the John A. Creighton Medical College; major and surgeon, U. S. V., in the Civil War, during which he served at Carver Hospital, Washington, and in charge of the U. S. Marine Hospital, St. Louis; as medical director of the Platte district of the Department of Missouri and later of the Department of the Platte; and then acting assistant surgeon, U. S. Army; formerly chief surgeon of the C. M. & St. P. Ry., Nebraska division, and consulting surgeon to the Union Pacific Ry.; one of the oldest practitioners of Omaha, died at St. Joseph's Hospital, Omaha, September 10, after an operation for prostatitis, from exhaustion, aged 73.

Everard D. Ferguson, M.D. Bellevue Hospital Medical College, New York City, 1868; a member and once vice-president of the American Medical Association; for three years surgeon at the Clinton prison, Dannemora, N. Y.; a member and first secretary of the New York State Medical Association and afterward president of the association; a member of the Rensselaer County Medical Society and the Medical Association of Troy and Vicinity; founder of the Samaritan Hospital, Troy, and one of the most prominent surgeons of New York State, who last April was tendered a dinner and presented with a loving cup by the Medical Association of Troy and Vicinity, of which he was the founder, died at his home in Troy, September 8, from acute intestinal disease, after an illness of three days, aged 63.

John Theodore Heard, M.D. Harvard University Medical School, Boston, 1850, a member of the Massachusetts Medical Society; assistant surgeon of the Thirteenth Massachusetts Volunteer Infantry in 1861, and in May, 1862, made surgeon of the same regiment, and then successively brigade surgeon of the first brigade, second division, first army corps, surgeon-in-chief of the same division; medical director of the same corps; surgeon-in-chief of the artillery reserve of the army of the Potomac, and finally medical director of the fourth Army corps; who was taken prisoner during the battle of Gettysburg and was made brevet lieutenant colonel, U. S. V., March 13, 1865; a well-known physician of Boston, died at his summer home in Magnolia, Mass., September 2, aged 70.

Charles A. Ruggles, M.D. Vermont Medical College, Woodstock, 1854; a member of the State Board of Health of California for 15 years; for four consecutive years president of that body; once vice-president of the National Conference of State Boards of Health, and selected to make a special report to that organization on leprosy; a delegate to the Pan-American Medical Congress in Mexico; a resident of Stockton, Cal., for 37 years, died at his home in that city, September 11, from heart disease, aged 77.

Leroy Milton Yale, M.D. Bellevue Hospital Medical College, New York City, 1866; a specialist on orthopedic surgery and pediatrics of New York City; at one time surgeon to Bellevue Hospital; a former editor of *Babyhood*, and an etcher of repute, died suddenly at his summer residence in Quissett, Mass., September 12, from cerebral hemorrhage, aged 65.

William Wilson Varick, M.D. Bellevue Hospital Medical College, New York City, 1876; a well-known practitioner of Jersey City; a member of the Hudson County Board of Health and visiting physician to the Jersey City Hospital, died at his home in Mersemere, Bergen County, N. J., September 8, after a prolonged illness from heart disease, aged 58.

Harvey Link, M.D. Kentucky School of Medicine, Louisville, 1862, a well-known practitioner of Millard, Neb., and for fifty years a practitioner of that place; a pioneer medical man of Douglas County, and at one time a member of the territorial legislature, died at his home in Millard, September 10, after an illness of one month, aged 82.

Melvin E. Page, M.D. Bellevue Hospital Medical College, New York City, 1889; a member of the Medical Society of the State of New York and of the Oswego Physicians' Society; a specialist on diseases of the eye and ear, died at his home in Oswego September 9, three days after an operation for appendicitis, aged 40.

Charles H. Hall, M.D. Pennsylvania Medical College, Philadelphia, 1855; for more than a quarter of a century a leading practitioner of Macon, Ga.; during the Civil War surgeon to the Forty-fifth Georgia Infantry, C. S. A., died at his home in Macon, from heart disease, September 9, after an illness of fifteen months, aged 70.

Edward W. Perkins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861; a practitioner of Dinwiddie County, Va., for 43 years; for many years physician to the Dinwiddie County Almshouse, died at his home near Reams Station, Va., September 4, after a protracted illness.

Wanser Wilson Werks, M.D. Rush Medical College, Chicago, and Hering Medical College, Chicago, about 1898, of Steelton, Pa.; hospital steward during the Spanish-American War, died in the Sister's Hospital, Buffalo, N. Y., July 27, one week after an operation for appendicitis, aged 31.

William C. Hill, M.D. College of Physicians and Surgeons of Chicago, 1902; a member of the American Medical Association, and a prominent physician of Murphysboro, Ill., died at St. Andrew's Hospital, Carbondale, Ill., September 4, after an illness of five weeks, aged 25.

Alva F. Ward, M.D. Western Homeopathic College, Cleveland, 1860; said to have been the oldest practitioner of Jamestown, N. Y., died at his home in that city September 10, after an illness of a few hours, from injuries received in a fall from a street car, aged 72.

Jay W. Sheldon, M.D. Homeopathic Hospital College, Cleveland, 1864, formerly president of the New York State Homeopathic Medical Society, and a member of the State Board of Examiners, died at his home in Syracuse, N. Y., September 7, after a long illness, aged 69.

Frank Harvey Dunbar, M.D. University of Vermont Medical Department, Burlington, 1903, of Swanton, Vt., died at the Mary Fletcher Hospital, Burlington, September 5, after an operation for cholelithiasis, from which he had been suffering for two months, aged 37.

Maurice James Chase, M.D. Vermont Medical College, Woodstock, 1850, for half a century a prominent practitioner of Galesburg, Ill., died at the home of his daughter in that city, September 6, after a brief illness, due to the effects of a fall, aged 80.

Jane Hammond Murphy, M.D. Woman's Medical College of New York Infirmary, New York City, died at the Job Haines Home for the Aged, Bloomfield, N. J., from paralysis of the throat, March 28, after an illness of two or three days, aged 85.

George W. Fellows, M.D. Vermont Medical College, Woodstock, 1851, for many years a practitioner of Kewanee, Ill., died at his home in Creston, Iowa, September 6, from Bright's disease, after a long illness, aged 78.

Cecil A. Butler, M.D. Medical College of Indiana, Indianapolis, 1901, of Manatee, Fla., died at the home of his parents near Huntsville, Ind., from cerebrospinal meningitis, September 6, after a short illness, aged 30.

James F. Kelly, M.D. Medical Department of Western Reserve University, Cleveland, 1896, formerly assistant superintendent of the Cleveland State Hospital, died suddenly in New York City September 4.

William A. Smith, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881, of Atlanta, Ga., died at the Tabernacle Infirmary in that city, September 8, after an illness of about three weeks, aged 48.

Elmer Beecher, M.D. Castleton (Vt.) Medical College, 1835; state senator from Chittenden County in 1860, died at his home in Burlington, Vt., July 16, from senile debility, after a short illness, aged 95.

William D. Walradt, M.D. Albany (N. Y.) Medical College, 1878; a practitioner of Castleton, N. Y., for more than 25 years, died in the Albany City Hospital, September 6, after an illness of two weeks.

Andrew J. Vann, M.D. Medical College of Georgia, Augusta, 1855, one of the oldest and most prominent practitioners of De Kalb County, Ala., died at his home near Porterville, September 4, aged 74.

John Stolze, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1865; of Reading, Pa., a surgeon during the Civil War, died at Lake Geneva, Wis., September 11, after a lingering illness, aged 73.

William A. Smith, M.D. Medical College of Alabama, Mobile, 1881, of Anniston, Ala., died at the home of his mother in Mexia, Ala., September 5, from tuberculosis, after an illness of several months.

Joseph H. Drake, M.D. Homeopathic Medical College of Missouri, St. Louis, 1874, died at his home in Des Moines, Iowa, September 8, after an illness of two years, from heart disease, aged 60.

Charles M. Billings, M.D. New York Medical College, New York City, 1867, one of the oldest practitioners of Nashua, Iowa, died suddenly from heart disease, September 4, at his home, aged 68.

Percy Earnest Wagar, M.D. Detroit College of Medicine, 1894; treasurer of the Island of Negros, P. I., and later transferred to Manila, died in Manila August 12, from hyperpyrexia, aged 36.

James D. Seymour, M.D. Harvard University Medical School, Boston, 1872, a practitioner of Whately, Mass., since 1878, died in a sanitarium in Brattleboro, Vt., September 11, aged 56.

Edgar A. Brooke, M.D. University of Maryland School of Medicine, Baltimore, 1887, formerly of Dillon, Mont., died at Bonner, Mont., September 3, from heart disease, after a short illness.

William C. Hamilton, M.D. Homeopathic Medical College, Philadelphia, 1861, for forty years a practitioner of Philadelphia, died at his home in that city, September 5, aged 63.

Charles B. Flint, M.D. New York Homeopathic Medical College and Hospital, New York City, 1890, died at his home in Watertown, N. Y., September 8, after a brief illness.

C. F. Champion, M.D. Louisville (Ky.) Medical College, 1891, a pioneer practitioner of Enid, Okla., died at Wichita, Kan., September 9, after an illness of several years.

Samuel Fernald, M.D. Hahnemann Medical College, Philadelphia, 1884, died at his home in Philadelphia from laryngitis, July 30, after an illness of nine days, aged 79.

William F. Wallace, M.D. Columbus (Ohio) Medical College, 1880, died at his home in Rochester, N. H., September 5, from heart disease, aged 56.

William H. Clark, M.D. Beach Medical College, Indianapolis, 1886; of Indianapolis; died suddenly in that city, from heart disease, August 30, aged 76.

Marcus P. Anthony, M.D. Atlanta (Ga.) Medical College, 1892, a practitioner of Lake Butler, Fla., died at Blue Ridge, Ga., August 24.

Narcissus Garand, M.D. Toledo (Ohio) Medical College, 1885, died at his home in Toledo September 6, from Bright's disease, aged 66.

Joseph Wolfgarten, M.D. National Medical University of Chicago, 1895, died at his home in Chicago, September 10.

Deaths Abroad.

Isidor Neumann von Heilwart, M.D., formerly professor of dermatology and syphilography at Vienna, died August 31, aged 74. He was professor of these specialties from 1873 to 1903, when he reached the age limit. His manuals on dermatology and syphilis and his great atlas of cutaneous affections are known everywhere. He has trained a number of promising pupils, among whom may be mentioned E. Finger, Rille, Glück, Ehrmann and Matzenauer.

A. Herzen, M.D., professor of physiology at Lausanne, died August 24, aged 67. He was born in Russia, but his scientific work was done in Switzerland. His published works were mostly devoted to the physiology of the stomach and brain, with numerous popular works on physiology, hygiene and school inspection. His pamphlet, "Hygiène et Moralité," has been translated into many languages, and the German translation has been officially commended to students in Germany. He wrote with equal fluency in the five principal languages of Europe.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writers's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE REST CURE FOR NEURASTHENIA.

——, FLA., Aug. 31, 1906.

To the Editor:—I would appreciate advice concerning any, or the best literature concerning the Weir Mitchell treatment of neurasthenics. I understand he has no medical work out on this subject. I would appreciate it if you would put me on the right track to get a clear understanding in print of the so-called rest cure treatment. N. A. P.

ANSWER.—The so-called "rest cure," employed with such success in properly selected cases of general nervous prostration, especially in thin, anemic, run-down women, and consisting primarily of a judicious application of isolation or seclusion, forced feeding, and passive exercise, is the outgrowth of the early observations of Samuel Jackson. It is to Weir Mitchell, however, that we are specially indebted for the elaboration and scientific systematizing of this line of therapy, and hence it is not infrequently spoken of as the "Weir Mitchell treatment." In 1877 appeared his little book, "Fat and Blood," in which the treatment was first systematically outlined. The book is still the authority on the subject. In 1881 he again elaborated the treatment in his "Lectures on Diseases of the Nervous System, Especially in Women," (second edition, 1885). Dr. Mitchell has discussed the treatment incidentally in many of his later writings. In 1883 the rest cure was strongly commended, elaborated, and made popular in Europe by W. S. Playfair of London in "The Systematic Treatment of Nerve Prostration and Hysteria." These essays of Mitchell and Playfair placed the treatment on a firm, scientific basis. Since this introduction of the rest cure it has undergone many minor modifications at the hands of many physicians, and its literature has grown enormously. The explanation of these numerous modifications lies in the fact that the diseases, such as neurasthenia, for instance, in which faulty metabolism is so obvious, are not all regarded in the same way by all physicians. A general outline of the treatment will be found in any of the larger works on nervous diseases, especially those of Beard, "Nervous Exhaustion;" Mills, "Diseases of the Nervous System;" Wood, the article on "Neurasthenia" in vol. v of Peffer's System; Oppenheim, "Diseases of the Nervous System;" Dana, "Text-Book of Nervous Diseases;" Mettler, "Diseases of the Nervous System;" and others. The current literature on the subject is so extensive that an adequate list of it here would occupy too much space. Our correspondent is referred to the Index to Current Medical Literature which appears in THE JOURNAL in the last issues of June and December.

The purpose of the treatment is "to renew the vitality of feeble people by a combination of entire rest and excessive feeding, made possible by passive exercise obtained through the steady use of massage and electricity." Six weeks or more of seclusion from friends and relatives are enjoined. Absolute mental and physical rest in bed is insisted on. Daily massage, bathing (where partial rest is in use) and electricity are administered. Selected, regularly-given food, and appropriate tonics, with symptomatic medication complete the régime. It is obvious that there is possible a

wide latitude in the exhibition of this line of treatment. For this reason it is capable of doing great harm as well as great good. It can not be employed by any rule-of-thumb. The principles underlying it and the ends sought for in the particular case in hand must be clearly defined in the medical attendant's mind. This being given and the cases carefully selected, we have in the so-called rest cure of Weir Mitchell a most powerful and successful therapeutic measure.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 15, 1906:

Wales, Philip G., surgeon, on the expiration of his present leave of absence, ordered to Fort Wayne, Mich., for duty.

Woodall, Wm. P., asst.-surgeon, granted ten days' leave of absence.

Torney, Geo. H., deputy surgeon-general, having completed the duty for which he was ordered to Washington, D. C., will return to his station.

Brechemin, Louis, Jr., asst.-surgeon, ordered to proceed from Camp of Instruction, American Lake, Washington, to Seattle, Wash., for duty on the transport *Buford*, en route to Honolulu, H. T.

Crabtree, Geo. H., asst.-surgeon, advanced to the rank of captain from Sept. 5, 1906.

Lyster, Theo. C., asst.-surgeon, left Ancon, Canal Zone, Isthmus of Panama, en route to the United States, on leave of absence.

Noble, R. E., asst.-surgeon, leave of absence further extended 21 days.

Ragan, Chas., asst.-surgeon, the leave of absence granted in S. O. 65, Sept. 3, 1906, Army and Navy Gen. Hosp., Hot Springs, Ark., is extended five days.

Lewis, Wm. F., asst.-surg., ordered to proceed from Chicago, to Fort Sheridan, Ill., for temporary duty.

Ashford, B. K., asst.-surgeon, ordered to accompany Second Battalion, Corps of Engineers, from Camp of Instruction, Mt. Gretna, Pa., to Washington Barracks, D. C.

Murray, Alexander, asst.-surgeon, granted 10 days' leave of absence.

Woodruff, Chas. E., surgeon, granted 15 days' leave of absence.

Porter, E. H., contract surgeon, arrived at Fort Reno, Okla., for temporary duty.

Stearns, C. H., contract surgeon, left Fort Monroe, Va., on 7 days' leave of absence.

Ware, Wm. H., dental surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Jenkins, F. E., contract surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Jordan, E. H., contract surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Baker, C. L., contract surgeon, leave of absence extended one month.

Sanford, J. L., contract surgeon, leave of absence extended one month.

Stone, F. P., dental surgeon, granted leave of absence for 14 days.

Van Kirk, H. H., contract surgeon, granted leave of absence for one month.

Wolven, F. H., dental surgeon, will proceed from Fort Trumbull, Conn., (vin Fort Jay, N. Y., for temporary duty for a period of 14 days) to Fort Monroe, Va., for temporary duty for a period not to exceed 2 months.

Mead, J. A., contract surgeon, returned to duty at Watertown Arsenal, Mass., from leave of absence.

Stanton, S. C., contract surgeon, left Headquarters, Dept. of the Lakes, Chicago, on 6 days' leave of absence.

Richardson, W. H., contract surgeon, returned from duty with Field Hospital, Camp of Instruction, Fort Benjamin Harrison, Ind., and assigned to duty to accompany 10th Battalion, Field Artillery, to Michigan City, Ind., for target practice.

Hereford, J. R., contract surgeon, left Fort Caswell, N. C., for Fort Screven, Ga., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 15, 1906:

Moore, J. M., surgeon, detached from the *Puritan* when out of commission; to *Franklin*, Navy Yard, Norfolk, Va.

Bell, W. H., surgeon, detached *Nevada*, to home and wait orders.

Lumsden, G. P., surgeon, detached *Minneapolis* when out of commission; to home and wait orders.

Payne, J. H., Jr., P. A. surgeon, detached *Arkansas;* to home and wait orders.

Iden, J. H., P. A. surgeon, detached *Florida;* to home and wait orders.

Geiger, A. J., P. A. surgeon, to Naval Hospital, Mare Island, Cal.

Farwell, W. G., asst.-surgeon, detached *Wordcn* to *Connecticut.*

Lee, A. E., asst.-surgeon, detached Naval Hospital, Mare Island, Cal., to Medical School, Washington, D. C.

Mears, J. B., asst.-surgeon, detached *Minneapolis* to *Wordcn.*

Percy, H. T., surgeon, detached Naval Hospital, Yokohama, Japan, to home and wait orders.

Minter, J. M., asst.-surgeon, to Naval Hospital, Norfolk, Va.

Huff, E. P., acting asst.-surgeon, to Naval Hospital, New York.

Steele, J. M., medical inspector, to Naval Recruiting Office, Cleveland, Ohio.

Ribbett, C. T., medical inspector, to U. S. R. S. *Franklin.*

Wentworth, A. R., surgeon, to U. S. S. *Louisiana.*

Schaller, W. F., asst.-surgeon, and Longabaugh, acting asst.-surgeon, to the U. S. Naval Medical School, Washington, D. C., Sept. 29, 1906.

Munger, C. B., asst.-surgeon, to Naval Station, Guam, L. I.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 12, 1906:

Geddings, H. D., asst. surgeon-general, granted leave of absence from Sept. 15 to 30, 1906, both days inclusive.

Sawtelle, H. W., surgeon, placed on "waiting orders," to date from Sept. 5, 1906.

Godfrey, John, surgeon, directed to report to chairman of board of medical officers, Washington, D. C., Sept. 13, 1906, for physical examination.

Wertenbaker, C. P., surgeon, granted leave of absence for seven days, from Sept. 15, 1906.

Wickes, H. W., P. A. surgeon, granted two days' leave of absence, from Sept. 11, 1906.

Earle, B. H., P. A. surgeon, relieved from duty at Columbia River Quarantine Station and directed to proceed to Charleston, S. C., and assume command of th. service.

Smith, F. C., asst.-surgeon, granted leave of absence for two days, from Sept. 4, 1906, under Paragraph 191 of the Regulations.

Fogarty, J. N., acting asst.-surgeon, granted leave of absence for seven days.

Kimsey, W. A., acting asst.-surgeon, granted leave of absence for thirty days, from Sept. 10, 1906.

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for ten days, from Aug. 14, 1906.

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for four days, from Sept. 2, 1906.

McConnell, A. P., acting asst.-surgeon, granted four days' leave of absence, from Sept. 10, 1906.

APPOINTMENTS.

Dr. William W. Miller, of Tennessee, commissioned (recess) as asst.-surgeon, Public Health and Marine-Hospital Service, Sept. 4, 1906.

Dr. Robert A. C. Wallenberg, of Michigan, commissioned (recess) as asst.-surgeon, Public Health and Marine-Hospital Service, Sept. 4, 1906.

BOARD CONVENED.

A board of officers was convened to meet at the bureau, Washington, D. C., Sept. 13, 1906, to determine whether or not the physical condition of Surgeon John Godfrey is such as to entitle him to "waiting orders." Detail for board: Asst. Surgeon-General H. D. Geddings, chairman; Asst. Surgeon-General J. M. Rager; Asst. Surgeon-General J. W. Kerr, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general Public Health and Marine-Hospital Service during the week ended Sept. 14, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Aug. 25-Sept. 1, 3 cases.
North Dakota: State, July 1-31, 8 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, July 21-28, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, June 1-30, 177 deaths.
Brazil: Bahia, July 28-Aug. 11, 6 cases, 2 deaths; Pernambuco, July 15-31, 4 deaths.
Gibraltar: Aug. 19-26, 1 case.
Italy: General, Aug. 8-16, 3 cases.
Panama: Colon, Aug. 19, 3 cases.
Turkey: Constantinople, Aug. 12-19, 1 death.

YELLOW FEVER.

Cuba: Habana, Aug. 10, 1 case.
Guatemala: Gualan, 2 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, July 14-28, 126 cases, 115 deaths; Provinces, 968 cases, 704 deaths.

PLAGUE.

Australia: Cairns, July 14-21, 1 case; Sydney, July 7-14, 1 case, 1 death.
Brazil: Bahia, July 28-Aug. 4, 1 case, 1 death; Rio de Janeiro, July 7-15, 2 cases.
Egypt: Alexandria, Aug. 10-14, 3 cases, 2 deaths; Port Said, Aug. 11, 2 cases; Suez, Aug. 11-16, 3 cases, 2 deaths; Garbieh Province, Aug. 13, 1 case, 1 death.
India: General, July 14-21, 959 cases, 796 deaths.
Japan: Formosa, Aug. 1-10, 3 cases, 6 deaths.

Society Proceedings

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 2.
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.

The President, Lieut.-Col. Albert H. Briggs, N. G., N. Y., in the Chair.

The meeting was called to order by the president, who informally welcomed the association to Buffalo and gave notice that the formal welcome would be extended at a meeting to be held the same evening in the Y. M. C. A. building.

Reports.

The executive council reported the election of members during the year, and submitted the proposed amendments to the constitution providing for the establishment of a class of affiliated members containing the United States pension examining surgeons, the medical officers of the United States revenue service, and of the other government services and other persons interested in military medicine and surgery; providing that the corresponding members should report at the end of each year to the secretary, informing him of any change of address or title, the penalty for failure to so report being suspension, and providing that the honorary members should report to the secretary at the end of each year notifying him of any change of address or location. The executive council also recommended a change in the by-laws whereby the name of the official organ should be changed from the *Journal of the Association of Military Surgeons of the United States* to *The Military Surgeon*, with the subtitle reading, *The Journal of Military Surgeons of the United States*.

During the year 91 members have been added and 9 have died.

Award of Enno Sanders Prize.

The Enno Sanders prize medal was awarded Major James Evelyn Pilcher, the secretary, whose essay was entitled, "The Training of the Medical Officer of the State Forces to Best Qualify Him for Local Service and Mobilization with National Troops." The author summed up the subject as follows:

1. There is need of special study on the part of the medical officers of the National Guard and state troops to fit themselves for work in their own forces, not only in local service, but in connection with the national services in time of war and in peaceful mobilization.

2. The most essential feature in the effort to secure harmonious action with other state troops and with the national forces is uniformity of training, particularly along the lines of medico-military administration.

3. The most important element of the medical officer's training is confessedly the highest grade of efficiency in military hygiene, medicine and surgery. But of great importance and overlapping these to a considerable degree is a familiarity with medico-military administration, without which, indeed, the proper practice of military medicine, surgery and hygiene will be impossible. The medical officer must become deeply acquainted with the proper methods of selecting recruits; he must be able to control his men, commanding respect, not only of the hospital corps, but of the sick under his direction; he must be an authority beyond dispute on camp location and organization; he must understand the principles and practice of field hospital construction and composition; he must have experience in the instruction and drill of the sanitary soldiers, and he must be prepared to protect his service and assist his comrades by a thorough acquaintance with the records of his department.

4. To crown all these and to add to his efficiency in every respect, there must have developed in him an enthusiasm based on loyalty to the nation and interest in his profession, which shall impel him at all times to labor unceasingly and incessantly for the good of the service which has honored him with its commission.

By pursuing, then, these lines of work and thought, the medical officer of the National Guard of the United States will find his department *semper paratus* for all the emergencies of peace within the limits of the commonwealth which he is serving, and ever ready, in case the dark clouds of national or international conflict should overshadow the horizon of the nation's glory, to at once unite and coalesce with the forces which the mother country has maintained as a nucleus about which all military operations shall center.

Public Meeting.

The public meeting to welcome the association was held in the auditorium of the Young Men's Christian Association building on the evening of September 11, chairman of the committee on arrangements, Hon. Herbert P. Bissell, presiding. Addresses of welcome were delivered on the part of the city of Buffalo by the acting mayor, Hon. Louis P. Fuhrman; on behalf of the medical profession by Major Roswell Park; on behalf of the state of New York by Hon. Rowland B. Mahaney, and on behalf of the Association of Military Surgeons of the United States by the president of the association, Lieut-Col. Albert H. Briggs.

Foreign Delegates.

The foreign delegates were then presented with the insignia of the association by the secretary, who accompanied each presentation with appropriate remarks.

The following delegates to the association from foreign countries were present:

China—Surgeon-Captain Ho Ken Yuen, Imperial Navy; Surgeon-Major Tchau Shi Wa, Imperial Army, and Surgeon-Captain Kai Sha Chow, Imperial Army.
Mexico—Major Alejandro Ross, C.M.-M.M.
Great Britain—Major Arthur Gaskell, staff surgeon, Royal Navy; Lieutenant-Colonel William Grant Macpherson, Royal Army Medical Corps and Colonel William John Read Rainsford, Royal Army Medical Corps.
India—Major W. H. W. Elliot, I. M. S.
Guatemala—Colonel Ramon Bungoecha, chief of the Medical Department of the Army.
Nicaragua—Surgeon-General J. Lysandro Medina.
France—Colonel Henri Mareschal, chief surgeon of the garrison of Paris.
Canada—Lieutenant-Colonel George Henry Porke and Major W. H. Delaney.
Italy: Lieutenant Giacomo Tartaro, surgeon Royal Army Reserve.

Election of Officers.

The following officers were elected: President, Col. Valery Havard, assistant surgeon-general, U. S. Army; vice-presidents, Rear Admiral Presley M. Rixey, surgeon-general U. S. Navy; Col. George Tully Vaughan, late U. S. P. H. and M. H. Service, and Col. Joseph K. Weaver, N. G. Pa., Norristown, Pa.; secretary, Major James Evelyn Pilcher, U. S. A., Carlisle, Pa. (re-elected); assistant secretary, Capt. J. Carlisle De Vries, N. G. N. Y.; treasurer, Major Herbert A. Arnold, N. G. Pa. (re-elected).

After discussion of Atlantic City, Denver, Pittsburg, Milwaukee and the Jamestown Exposition, it was decided to hold the 1907 meeting in Norfolk, Va., at a date to be fixed by the executive council.

(*To be continued.*)

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Salt Lake City, Utah, Aug. 30 Sept. 1, 1906.

(*Continued from page 885.*)

Principles and Mechanics of Abdominal Drainage.

Dr. R. C. Coffey, Portland, Ore., presented the following deductions: "1. Fluids are rapidly absorbed by the peritoneal cavity; crude or granular matter only through lymph spaces at the diaphragm. 2. A drainage tract always contains micro-organisms. 3. Any form of drainage is isolated from the free peritoneal cavity in six hours. 4. A drain causes a flow of serum by irritation which is profuse in proportion to the amount of drain within the peritoneal cavity. 5. This flow is delivered to the surface only in proportion to the amount of drainage passing out through the wound. 6. Serum and pus accumulate around drainage only when the drainage at the outlet is less than that contained inside, or is not sufficiently extensive to deliver the fluid before it is filled with débris and granulations. 7. Blood and pus are never found in the neighborhood of a properly applied drain after 48 hours. 8. The flow of serum dissolves blood clots and thick pus, leaving the gauze clean and white by the time it ceases. 9. The flow of serum does not occur to any extent in formed abscess cavities; therefore, blood and pus are not well drained from them by capillary drainage. 10. A tube will drain a walled cavity

and will drain the peritoneal cavity under the influence of gravity, but not otherwise. 11. A single tube is much more likely to be choked by intestines and omentum than two or more parallel tubes. 12. Gauze drains in proportion to the amount coming through the opening, and will only drain when it is in contact with dressings or clothing, or when its outside end is at a lower level than the cavity to be drained. 13. Small gauze drains are likely to be choked at the exit, unless covered by a tube or protective. 14. There are three cavities of the peritoneum to be drained, the right and left flank separated from each other by the spinal column, and the pelvis separated from the flanks by the psoas muscles. Either flank holds more fluid, and is an inch deeper than the pelvis, and its bottom is more than four inches below the top of the divide made by the psoas muscle on which the appendix rests. The body must be elevated to an angle of 51 degrees to bring the bottom of the flank on a level with the divide, and 60 or 70 degrees to properly drain by the Fowler position. The entire cavity can be drained by gravity by a lateral position. 15. Drainage should always be in contact with the parietal peritoneum on one side. A line drawn from the center of the perineum to the tip of the shoulder passes through the pelvis and deepest part of the flank and on the right side through the appendix. These diagonal lines we call the right and left drainage lines. Drainage should always be placed external to these lines or just above the pubic bone. 16. If only one of the three cavities is infected, it alone should be drained."

Massage of the Heart in Apparent Death from Anesthetics.

DR. D. S. FAIRCHILD, Des Moines, Iowa, reported a case of massage of the heart in apparent death from anesthesia, and reviewed the literature of 24 other reported cases. He spoke of the time after arrest of the heart when positive results might be expected. He discussed the best route for approaching the heart for the purpose of massage.

Technic of Laminectomy.

DR. HARRY M. SHERMAN, San Francisco, discussed the relative merits of the simpler form of the operation as contrasted with the osteoplastic method, endeavoring to answer the question: Is the complex operation, with its sacrifice of motor nerves and its cutting of muscles for the sake of saving the laminæ, worth while? In general, this question was answered in the negative, but certain conditions were pointed out, as in the case of pressure paraplegia of vertebral tuberculosis with a right angle kyphos, in which the preservation of the laminæ, as a support for the longitudinal spinal muscles, might be essential for the complete and permanent relief of pressure on the cord, and in such cases the osteoplastic method might find a satisfactory use.

Peripheral Versus Intracranial Operations for Tic Douloureux.

DR. CHARLES H. MAYO, Rochester, Minn., said that one of the most distressing diseases is facial neuralgia. More methods of internal, external and surgical treatment have been advanced for its cure than for any other condition. In 1896 Dr. Abbe reported a case in which he interposed mechanical obstruction to the reunion of the nerve by placing rubber tissue over the foramina of exit of the nerves in the skull. For nine years Dr. Mayo has employed silver screws to obstruct the infraorbital foramen after torsion, removal of the nerve by the Thiersch method. For a less period the inferior dental canal has been obstructed with equal success. While not as effectual as the intracranial operation, because of the numerous branches, still the method controlled the two branches most commonly affected. It can be employed on many who would not submit to the intracranial operation, with its attendant mortality and occasional failures to cure.

Aneurismal Varix.

DR. J. CLARK STEWART, Minneapolis, reported an interesting case of large aneurismal varix of the forearm, and exhibited photographs. He presented a history of such cases, and described the operative methods used. He likewise discussed the proper treatment of the lesions in the upper and lower extremities, and considered the radical difference in the conditions present.

Sarcoma of the Male Breast.

DR. F. GREGORY CONNELL, Salida, Colo., reported this case. The patient was 25 years of age. The mother had both breasts removed for cancer. There was no history of traumatism. The tumor started in a congenital discoloration of the skin near the right nipple, and in three months had grown to the size of a walnut. The breast and axillary glands were removed. The healing of the wound was perfect. Two months after discharge the patient presented himself for examination, and a keloid was found to have developed in the cicatrix. When last seen, six months later, the keloid was smaller, and there was no evidence of a recurrence of the sarcoma. Histologic examination showed the tumor to be a spindle-celled sarcoma.

Malignant Complications and Degenerations of Uterine Fibromyomata.

DR. CHARLES W. OVIATT, Oshkosh, Wis., presented the following conclusions: 1. Women suffering from fibroid disease of the uterus incur a greater risk in allowing it to remain than in having it removed by a competent surgeon. 2. The fact that adenocarcinoma of the body of the uterus occurs much more frequently in cases of fibroid tumor than does cancer of the cervix, leads him to believe that there must be a direct causative relation between fibroid tumors and cancer of the body of the uterus. 3. Every fibroid tumor removed should be subjected to careful laboratory study, no matter what its gross appearance.

Treatment of Tuberculosis of the Kidney and Bladder by Nephrectomy.

DR. LEONARD FREEMAN, Denver, after detailing 14 cases on which he had operated for tuberculosis of the kidney and bladder, drew the following conclusions: 1. Tuberculosis of the urinary tract very often begins in the kidney, attacking the bladder secondarily. 2. It is usually at first unilateral. 3. Medical or climatic treatment is unsatisfactory in most cases. 4. The ideal treatment is early nephrectomy, providing there is one sound kidney. 5. Tuberculosis elsewhere, unless far advanced, is not a contraindication to operation. 6. Tuberculosis of the bladder derived from one kidney is positively benefited by nephrectomy, and can seldom be cured without it. 7. The demonstration of tubercle bacilli in the urine often fails. 8. The removal of the ureter is not ordinarily indicated. If sinuses result, they nearly always heal with time.

DR. A. H. KERR, Salt Lake City, reported a case of ureteral cystostomy or uretero-vesical implantation.

Operative Procedures for Chronic Urethritis.

DR. A. C. STOKES, Omaha, discussed the incurable gonorrheas in the male. He gave the reasons why this disease is so often not cured. He spoke of the havoc of gonorrhea in civilization. A minute anatomic and pathologic diagnosis must be aimed at, and having once arrived at a definite diagnosis as to the position of the infection, we should resort to the methods that are most applicable to its treatment. He spoke of external urethrotomy in its relation to chronic gonorrhea, and of operating for vesiculitis, prostatitis and old infections in the vas deferens. He reported 4 cases where chronic gleet was treated by external urethrotomy and cauterization of the prostatic follicles and urethra. He discussed vasotomy in the treatment of infections of the seminal vesicles and epididymis. He described the technic of the latter procedure and reported 5 cases in which he had operated.

The following papers were also read: "The Control or Elimination of Pneumothorax During Operations on the Chest" (with lantern slides), by Dr. Dudley Tait, San Francisco; "Abdominal Contusions," by Dr. William Jepson, Sioux City, Iowa; "A Point in the Technic of Ligating the Appendix in Appendectomy," by Dr. Jabez N. Jackson, Kansas City, Mo.; "Intestinal Suture," by Dr. A. F. Jonas, Omaha; "Complications and Sequelæ of Prostatectomy," by Dr. J. N. Warren, Sioux City, Iowa.

The election of officers was reported in THE JOURNAL, September 8, page 788.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 886.*)

SECTION ON STATE MEDICINE.

Hygiene of the Home.

DR. JOHN J. CASSIDY, Toronto, a member of the Ontario Board of Health, offered in his paper many practical suggestions for the perfection of the hygiene of the home. The first requirement is a dry site, and the ideal situation is one in which the sunlight may penetrate at some time during the day into every room of the house. The basement should extend beneath the entire house, with windows extending nearly to the top of the wall, so that space may be given for the expulsion of gases arising from the decaying and putrefaction that is continually going on in the soil. A floor of six inches of closely packed clay forms a good resistant and is more impervious to the passage of gases than solid concrete. Moderately hard well-burned brick is, he believes, the most suitable material for outside walls, and a coating of paint will prevent rain from soaking in the brick. Good plaster is the best for walls, and wall paper should be avoided. Kalsomine offers much less obstruction than paint or wall paper to the air. Ample openings for light and a good circulation of air are needed; all doors and windows should extend high up toward the ceiling. The advantage of a chimney in a room which facilitates the escape of impure air and the entrance of fresh air was referred to. The basement and the kitchen, which are in a way the most important parts of the dwelling, should naturally receive more frequent attention than the living rooms, where presumably organic filth is less likely to gain access. Cleanliness in the kitchen is necessary, sewage should be kept under cover and frequently removed, and the rooms should be ventilated automatically. The bed chamber should contain no carpets, but only a washable rug near the bed. The waxed floor should be mopped every morning with a damp cloth, and the walls painted with white enamel paint. The window curtains should be of cotton or some washable fabric, and frequently laundered.

Medical Inspection of Schools.

DR. HELEN MACMURCHY, Toronto, referred to the government indorsement in Great Britain of the medical inspection of schools and pupils, which the country had consequently adopted. The day had come when there must be the greatest possible coöperation between the teacher and the medical professon, and it was important that the medical inspection should be made by qualified medical practitioners who should be properly remunerated. Inspectors need special training and many of the colleges are now giving instruction along this line. The first step in advancement consists in the modification of existing conditions, and both the pupil and the parent should be impressed with the importance of cleanliness, pure food, pure air and good health. Children of the poor should get enough to eat to bring about that development necessary for good health and consequent good citizenship. The importance of hygiene can not be overestimated.

MR. WILLIAM SCOTT, B.A., principal of normal schools, held that compulsory school attendance must necessarily be supplemented by a compulsory school inspection law for effective dealing with infectious diseases. He held that it was not the place of the teacher to perform the medical inspection; the teacher can do much toward making the pupil more careful, ambitious, truthful and earnest in intellectual, moral and physical conditions, but the teacher should be well trained to understand the significance of a sound mind in a sound body. Medical inspection will do much to aid the teacher, not only by supporting his authority, but by suggestions which will assist him to maintain the health of the pupils under him at the highest possible standard. He said that an educational campaign is necessary, not only to deal with infectious diseases, but to improve those physical defects, which experience has shown to be present in a large percentage of school children, and which can be minimized, if not entirely removed. He emphasized the importance of the education of the teacher along those lines which should enable him to observe significant hygienic conditions.

Water-Gas Poisoning.

PROF. JOHN GLAISTER, Glasgow, discussed the questions of the risks to health and life from the recent adoption by municipalities of carburetted gas, as a substitute for, and an admixture of the common coal gas. In Great Britain, the problems arising from the use of water gas resulted in the referring of the question to a Department Commission, and its findings in the circumstances were declared to be both reasonable and fitting. Should the adoption of carburetted water gas become general, it should be under state regulations, such as pertain in the Public Health Act to the internal drainage systems in our homes. It would be most desirable that before such gas be put in a new building, the joints and fixtures should be inspected and that in all old buildings, the existing fittings should be initially inspected and that in all buildings used for dwelling places, the power of periodical inspection by the gas authorities should be given and its exercise enforced on similar lines to those given the water companies.

International Sanitary Protection.

DR. PETER H. BRYCE, Ottawa, Chief Medical Officer of the Department of the Interior, opened this discussion by a paper on "International Coöperation in the Inspection of Emigrants and Immigrants." He referred to the problems arising from pauperism, war, commercial disaster, industrial revolutions in European countries and spoke of the continued flow of emigration to Canada. Medical inspection is most imperative and the practical coöperation which exists between England, Canada and the United States, have resulted in the development of a most desirable class of immigrants. A wise recommendation to be urged by representative medical men is that which will require specific international medical inspection in connection with immigration, and the rigid recognition and enforcement of laws regarding the influx of undesirables.

State Control of Health.

DR. JENNIE G. DRENNAN, St. Thomas, pleaded for a fuller recognition, by the state, of its duty toward the health of the people. She believed that in the scope of its health department should be included all hospitals, asylums and public institutions. The public should be taught how to live and if the state were as anxious to preserve health as it is to preserve peace, this desirable result would soon be attained. She deplored the tendency on the part of the public to trust its healh to "patent medicines," and contended that men had been taught everything else but how to live properly. She emphasized the responsibility of the state in this direction, and urged that those having to do with the preservation of the public health should constitute an organized army of men and women made fully acquainted with their official duties by special educational courses.

SURGEON RELL M. WOODWARD, U. S. P. H. and M.-H. Service, Boston, outlined what had been done on the part of the United States in the medical inspection of immigrants, and described the application of rigid methods of sanitary inspection which were instituted at Rotterdam. In this inspection hot baths are given by the attendants, as the emigrants are often totally ignorant of baths and their purposes; after this, the hair of the male emigrants is cropped, and that of the female emigrants carefully combed and inspected. After a detention of five days, if no disease of any kind develops, the emigrants are allowed to proceed on their journey. Dr. Woodward believes that more attention should be given to immigrants passing through a country and that greater power should be given to the health officers of the country of destination.

Food Inspection and Supervision.

MR. A. MCGILL, B.A., assistant analyst of the Inland Revenue Department, Ottawa, in a paper entitled, "Some Remarks on Food Preservatives with an Idea of Legislation in the Matter," remarked that the presence of a preservative in a product should always be announced on the label, and that the discrimination of the purchaser to protect himself by this publicity alone can not be trusted. He mentioned salt, sugar, wood smoke and alcohol as being the least injurious of the preservatives commonly used. In his report on preservatives, compiled for the dominion government, he recommended:

(a) That the use of formaldehyd or formalin, or preparations thereof, in foods or drinks, be absolutely prohibited, and that salicylic acid be not used in a greater proportion than one grain

per pint in liquid food, and one grain per pound in solid food; its presence in all cases to be declared.

(b) That the use of any preservative or coloring matter whatever in milk offered for sale in the United Kingdom be constituted an offense under the Sale of Food and Drugs Acts.

(c) That the only preservative which it shall be lawful to use in cream be boric acid, or a mixture of boric acid and borax, and in the amount not exceeding 0.25 per cent., expressed as boric acid; the amount of such preservative to be notified by a label on the vessel.

(d) That the only preservative permitted to be used in butter and margarin be boric acid or mixtures of boric acid and borax, to be used in proportions not exceeding 0.5 per cent., expressed as boric acid.

(e) That in the case of all dietetic preparations intended for the use of invalids or infants chemical preservatives of all kinds be prohibited.

(f) That the use of copper salts in the so-called "greening" of preserved fruits be prohibited.

(g) That means be provided, either by the establishment of a separate court of reference or by the imposition of more direct obligation on the local government board to exercise supervision over the use of preservatives and coloring matter in foods, and to prepare schedules of such as may be considered inimical to the public health.

The author believed that the injuries produced by most preservatives is to the kidneys, and that a goodly proportion of the diseases of the kidneys may be due to this cause.

DR. HENRY L. E. JOHNSON, Washington, D. C., in his paper on "National Supervision and Standardization of Food," held that the question of pure food is of equal importance with that of good health and that this factor is being recognized, as is evidenced by the efforts of the hygienista, along the lines of the protection of the individual and national health. He pointed out the dangers of adulterated foods and "patent medicines" and the necessity of collecting, under a system of uniform legislation, all the duties which could possibly be assigned to boards of public health. He urged the importance of national coöperation in establishing a system of food standardization and the improvement and regulation of the conditions surrounding the preparation, production and sale of every form of food.

Sailors' Food.

MR. WILLIAM SPOONER, M. R. C. S., Liverpool, pointed out that a system of inspection has done much to remove the ills connected with the rations of the sailor, but that there are still many conditions existing which need improvement. The most important fact, in his idea, was that the human organism demanded variety, and that sufficient variety was not provided as a rule. The tendency was toward the excessive use of animal food, which did not conduce to the best health conditions. The speaker believed that fresh vegetables should be placed on every ship sufficient to last for as great a portion of the voyage as possible. He discussed at length the new compulsory food scale developed along proportionate lines.

Preservatives in Food.

PROF. JOHN GLAISTER, Glasgow, expressed the opinion that the use of preservatives in food is objectionable. The recognized use of certain preservatives, however, is a proof of their usefulness and he, therefore, suggested that there should be a classification of preservatives, into two classes, one of which would contain those which were harmless in operation and effect, and the other those which were harmful. He was inclined to think that a little more consideration might be paid to the effect of cold storage on food, as in many cases, meats chilled before rigor mortis has set in, putrefies very rapidly when taken out of cold storage.

(To be continued.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Eleventh Annual Meeting, held at St. Clair, Mich., Aug. 30-Sept. 1, 1906.

(Concluded from page 886.)

Spontaneous Rupture of the Esophagus.

DR. JOHN O. MCREYNOLDS, Dallas, Texas, reported a case of spontaneous rupture of the esophagus, which occurred about four o'clock in the morning, the patient dying from hemorrhage in a few hours. There was no hematemesis at any time. The autopsy showed a rupture three inches long in the lower third of the esophagus, the left pleural cavity, the mediastinal space and stomach being filled with dark grumous blood. Microscopic sections showed that the esophagus was very thin-walled and that the wall had been destroyed by a process of ulceration.

The Use of Paraffin.

DR. SECORD H. LAROE, Cleveland, Ohio, in a paper on "The Safest Method of Using Paraffin," described the technic of subcutaneous injections in saddle-back noses, in atrophic rhinitis, and in deformities after sinus operations. He detailed the causes of failure, the high and low melting points of paraffin, and outlined the dangers of the use of this substance and how to avoid them.

Spray and Electrocautery Useless.

DR. EDWARD J. BERNSTEIN, Kalamazoo, Mich., in a paper entitled "The Comparative Uselessness of the Spray and Electrocautery for the Rhinologist," stated that in his hands he had been using the spray steadily less and less as a means of cleaning the nose, and that he had long felt that it was futile to expect cure of any nasal conditions by the spray. He stated also that he had not used the electrocautery for ten years and could think of only the smallest possible number of conditions in which it might be used in preference to the knife. He believed that much of the harm assigned to rhinology may be traced to the fact that almost every physician's office in the land is supplied with a spray apparatus, with which physicians, without regard to pathologic conditions, attempt to treat nasal affections.

Treatment of Acute Dacryocystitis.

DR. LEE MASTEN FRANCIS, Buffalo, N. Y., stated that in most cases of acute dacryocystitis, stricture of the lachrymal duct is the causal factor. The success of the treatment depends on rapid control of pus and dilatation of the stricture. It is important to avoid lacerations which may be followed by stricture. Experiments have shown that antiseptics may be driven into the lachrymal sac by the use of inunctions. Pus formation may be controlled by drainage through the canaliculi, by gentle upward massage, by ice compresses and by inunctions. The author regards the probe as invaluable, but it should not be used until the pus has nearly disappeared and the acute inflammation subsided, and then only with extreme care.

Should the Antrum be Opened in Mastoid Operation?

DR. GEORGE F. SCOTT, Buffalo, N. Y., remarked that mastoid operations are performed by all sorts of physicians who always look for the antrum. After the ear has become dry, but the cells still remain affected, the antrum will be found dry also. There is no need to open it. With proper care, it is not at all difficult to select those cases which need antrectomy or the modified Schwartze operation.

Evacuation of the Tympanic Cavity.

DR. PERCY FRIEDENBERG, New York City, claimed that aside from the operative management of such grave complications of otitic disease as sinus thrombosis and brain abscess, the most practical advance in the otology of the present day has been in the recognition of the importance of early paracentesis of the tympanum and free drainage in acute otitis, as a preventive of mastoid involvement. Any measure which will aid drainage will be welcomed. For a number of years the author has made it a routine measure to aspirate the middle ear by suction through a sterilized glass tube immediately after paracentitis. By this means a dram or more of bloody or purulent fluid will be brought out, where otherwise a much smaller quantity would be obtained. By this procedure, the incision in the tympanum may be kept from premature closure and a second paracentitis thereby may be avoided. This treatment is free from the dangers of catheterization or Politzeration, which increase intra-tympanic pressure and may force septic matter into the mastoid cells. Furthermore, by causing a partial vacuum, it encourages depletion of the mucosa of the middle ear and flushes out the aural cavity.

Oral Tuberculosis.

DR. THOMAS E. CARMODY, Denver, described the channels of infection in tuberculosis of the mouth; primary and secondary infection and their relation to laryngeal and nasal lesions, and the influence of age, sex, occupation and personal habits. He then gave in detail the tissues most often affected with difference in lesions, and gave a description of the surgical, medical, curative and palliative treatment.

Is Laryngeal Tuberculosis a Primary Infection?

Dr. Lorenzo B. Lockhard, Denver, averred that the absence of pulmonary disease does not of itself establish the primary nature of tubercular laryngeal disease. Lymphatic involvement, especially of the tonsils and cervical glands had been proved. While the dependence of some laryngeal cases on disease of the tonsils and cervical glands had been demonstrated, a few cases had been recorded, substantiated by autopsies, in which the larynx and lungs have been found normal, and in these cases no reference has been made to the condition of the lymphatic system. There is no inherent peculiarity of the laryngeal mucosa or its secretions which should prevent it from becoming primarily infected, but as yet this occurrence has not been conclusively proved, despite the fact that tuberculosis is the most common of all laryngeal diseases.

Sarcoma of the Nose.

Dr. Robert Levy, Denver, reported a case in which the pathologic findings were verified by indisputable authority. The tumor was completely removed by intranasal operation. Recurrence did not yield to surgical measures. The development was coincident with the appearance of multiple sarcomata of the legs. After the cessation of all treatment, the nasal tumor disappeared completely, and some of the tumors of the legs also disappeared, but not all nor completely. The tumors of the leg returned and continued to grow until the patient died. At no time after the disappearance of the nasal tumor was there a return of the growth in the nose. The author then discussed the question of spontaneous disappearance of malignant growths.

Removal of the Faucial Tonsils.

Dr. Ovidus A. Griffin, Ann Arbor, Mich., stated that unanimity of opinion as regards the advisability of the complete removal of the faucial tonsils does not obtain. He gave the anatomy and physiology of the tonsils, and the indications for their removal, and stated that the extirpation should be as complete as possible. He then described an original scissors, by the use of which separation of the pillars and complete removal of the tonsils could be effected.

Eyestrain and Crime.

Dr. George M. Case, Elmira, N. Y., urged the necessity of the examination of the eyes of inmates of penal institutions and especially of reformatories and schools for incorrigibles. He stated that a large percentage of the young criminals of New York have strikingly high ocular defects. He considered eyestrain as a contributing factor in truancy in school, disinclination to work and inebriety. He believed that routine examination of the eyes of school children would do much toward the prevention of criminal tendencies and would elevate the standard of civilization, and considered that state appropriations should be made for this purpose. The managers and superintendents of institutions should be informed as to the baneful results of eyestrain in the production of crime.

Cataract Extraction.

Dr. Duff W. Greene, Dayton, Ohio, read a paper on "Cataract Extraction Within the Capsule by External Manipulation—the So-called Indian Method." The condition of the capsule often determines the amount of vision secured. Extraction within the capsule by external manipulation eliminates this and avoids secondary operation. Unfortunately, in some cases certain unknowable conditions of the zonula or of the capsule itself may defeat the endeavors to deliver the lens after this method. It is a more difficult operation than either the simple or the combined method. The section must be larger, the iridectomy broader, and the zonular attachments to the capsule must be broken up by direct and continuous pressure. The capsule itself must not be ruptured, as this is essential to the success of the method.

Cataract Extraction with Preliminary Capsulotomy.

Dr. Homer E. Smith, Norwich, N. Y., outlined the essentials of a smooth extraction, the preliminary treatment of the patient, the immediate preparation for operation, the capsulotomy done through the cornea with a knife-needle, the cornea having been dilated some hours before the extraction of the lens. He detailed the advantages of this procedure as compared with capsulotomy done subsequent to the corneal section, and described the extraction and the first dressings.

Nasal Obstruction.

Dr. Arthur E. Prince, Springfield, Ill., in his paper entitled "Some Considerations Relative to Nasal Obstruction," answered the following questions: (1) What is the cause of the prejudice against the removal of tonsils and what would overcome the prejudice? (2) What is the best method of removing hypertrophied turbinates? Is it wise to operate on both at the same time? (3) Is the return of adenoids often observed, and what is the best remedy to prevent their return? (4) What is the status of the profession with regard to the removal of adenoids, tonsils and hypertrophied portions of the turbinates at one operation? He gave a description of his methods and a summary of his results, and detailed the position, technic, anesthetic, instruments and after-treatment.

Travel Notes

(*Continued from page 713.*)

DISEASE AND HOSPITALS OF THE INTERIOR OF SOUTH AFRICA.

NICHOLAS SENN, M.D.

Professor of Surgery in the University of Chicago and Professor and Head of the Surgical Department of Rush Medical College.

CHICAGO.

The interior mountain plateau of South Africa has a healthful climate, and malaria, if it exist, is limited to circumscribed locations. No place along the East Coast is exempt from this disease, which prevails throughout the year, although it is much more frequent during the rainy season. Professor Koch has made the statement that in German East Africa the disease as a rule reaches its topographic limits at an altitude of 3,000 feet, and from what I have seen this rule applies to most parts of Africa. As soon as we reached this altitude we no longer saw the impress of malarial poisoning stamped on the faces of the people living on the coast, and the number of malarial patients in the hospital diminished with the increase of the altitude, being smallest in Johannesburg, which is situated nearly 6,000 feet above the level of the sea. At Victoria Falls, which has an altitude of less than 3,000 feet, malaria prevails to a considerable extent along the Zambesi River during the summer months, but the disease gradually diminishes in frequency between the river and Bulawayo, which is nearly twice as high above the level of the sea as the Victoria Falls.

Few tropical diseases have their origin either in Cape Colony or in the interior of South Africa, and the diseases encountered here resemble those met in temperate climates. The farther south I traveled from Victoria Falls the more the natives had lost their primitive-type, customs and habits, and in consequence had lost in part their resistance to some of the diseases of the Europeans, notably tuberculosis, carcinoma and appendicitis. In Cape Colony many of the natives, once black as ink, had quite a fair complexion, and the facial type had undergone decided changes toward that of the Europeans in consequence of the long-standing and free admixture of Caucasian blood. I will pass in brief review what I saw in the different hospitals as I traveled southward from Victoria Falls.

BULAWAYO MEMORIAL HOSPITAL.

This name was given to the hospital to commemorate the jubilee of Queen Victoria, and was built and opened its doors for the reception of the sick seven years ago. The hospital is a handsome brick building admirably adapted for the changeable climate of the country. It is built on the pavilion plan and is surrounded by large grounds, embellished by fine walks, trees, shrubs and flowers (see illustration). The main building, a large imposing one-story pavilion, is devoted to offices, resident surgeon's quarters and European patients. The capacity of the hospital is 120 beds, of which about one-half are in the two detached rear pavilions for the natives.

The European part has a number of well-furnished pleasant private rooms, for which the patients pay $4.50 a day. A number of larger rooms contain two and three beds, for which a smaller charge is made. Patients in the large wards pay according to their means. Most of the blacks are charity patients, but for some of these their employers pay a small sum. Henry Curtis, B.S. and M.D. (Lond.), F.R.C.S., is the resident surgeon. He does all the operative work, and his results have been exceptionally good, so much so that the surgical material has increased considerably from year to year during his term of service. He is a fine young man with superior attainments, and has kept pace with modern medical and surgical literature, although he has been isolated from medical centers for a number of years. The patients are nursed by three English Sisters and 13 pupil nurses. I was particularly impressed with the neat and clean conditions of the two wards for natives, and with the care given their patients by the Sisters and nurses. The operating room is small, but fairly well equipped for aseptic work. The institution has a Roentgen apparatus, the first one I saw in Africa, which is in charge of the resident surgeon.

In this hospital I first learned of the effects of civilization on the blacks, in causing a growing susceptibility to some of the diseases to which the savages appear to be almost immune. I refer particularly to carcinoma, appendicitis and tuberculosis of bones, joints and lymphatic glands. I saw none of these diseases in the blacks in the hospitals of the East Coast. Dr. Curtis has collected 12 cases of malignant disease in negroes, and is preparing a report of these for the medical press. In the hospital report for 1905 I find mention of two cases of sarcoma of bone occurring in natives; three cases of tubercular glands, and four cases of tuberculosis of bone, in one of which the disease involved the left humerus and right scapula, in two the vertebræ and in one the pubic bone. One case of appendicitis in the native is reported in which an abscess had formed. The patient was operated on, but died a few days later from pneumonia and cardiac failure. In the cases of glandular tuberculosis the disease implicated the inframaxillary glands in one case, the axillary in another, and in the third the crural glands were affected. During the year referred to, the hospital took care of 1,261 patients—722 whites and 539 blacks—and the average number of in-patients was 54. At the time of my visit not more than half the beds were occupied.

The demand on the hospital space is always heaviest during the rainy season, when the malarial patients, many coming from a distance, form the bulk of the inmates. The salubrity of the high mountain plateau of South Africa has become almost proverbial in that country. During the year, 469 cases of malaria and one of black-water fever were treated in the hospital, but in many of the cases the disease did not originate in Bulawayo or anywhere near it, as many of these patients came from localities where malaria is endemic. It is interesting to know that of the 469 cases of malaria only 128 of the patients were blacks, and that of the 19 cases of black-water fever all were whites with the exception of one, a colored boy from the Cape. Only 17 patients with typhoid fever entered the hospital during the year, and of these, 5 died, all of whom, with one exception, were whites. Of ten cases of pulmonary tuberculosis, six were in whites and four in blacks. Influenza is credited with only three cases, two whites and one negro; acute and subacute rheumatism with 31 cases, 10 whites and 21 blacks; pneumonia with 66 cases, and only two deaths; 17 whites and 49 blacks. Of 35 cases of scorbutus, 33 were blacks, and of these, 5 died; of the two whites, one died. None of the figures in the statistics is large, the diseases enumerated covering almost the entire nomenclature, and the absence of tropical diseases and the small number of acute gastrointestinal diseases is noteworthy, and the best possible evidence that Bulawayo is not a good place for many doctors.

The small number of injuries treated in the hospital also attracts attention. Only five amputations for injuries were performed during the year. Among the fractures enumerated were three of the skull, two of the ribs, four of the clavicle, one of the humerus, one of the radius and five of the tibia and fibula, all compound. Of the 134 operations performed, 48 were on whites and 86 on blacks. The hospital receives an annual government grant of $18,000, which is a material aid in defraying the necessary expenses. Half the cost of free native patients is also borne by the government, which amounted during the year 1905 to over $6,000. The entire expenses of the hospital amounted to about $65,820.

CARNARVON HOSPITAL, KIMBERLEY.

Kimberley is the most famous diamond city of the world, and its population of about 75,000 depends largely on the brilliant gems taken from its five mines. It has only one general hospital, named after a former governor. This was built soon after the discovery of the mines, twenty-five years ago, and has been enlarged since that time to meet the constantly increasing demands. Like all South African hospitals, it is constructed on the cottage plan, the building material of the one-story pavilions being brick and the roof corrugated iron. It can accommodate 200 patients. The two large

Bulawayo Hospital.

wards for the blacks are detached from the remaining buildings, as well as the new hospital for white children. Patients who can afford to pay are charged from 25 cents to $7.50 a day, according to accommodations. A large number of plainly furnished, comfortable rooms are the main source of income. The only government support the hospital receives is the hospital head tax of 25 cents a week imposed on all adult male natives. The large grounds, the broad verandas around each pavilion and the grate fires in the wards impart to the hospital an aspect of home comfort. At the time of my visit a biting cold wave from the south swept the treeless plains unmercifully and the open grate fires looked particularly attractive.

Two resident surgeons live on the premises in separate buildings and devote their whole time and attention to the care of the inmates. The senior resident surgeon is permitted to do consulting work outside of the hospital, but the junior's income is limited exclusively to his small salary. Nine English Sisters and 50 nurses and probationers have charge of the nursing. The training school for nurses in connection with the hospital is in a flourishing condition. A three years' course is compulsory. The teaching is done by the Sisters and regular lectures are given by the medical staff. The nurses' home is a new separate modern building. Cleanliness and good order prevailed throughout the institution, and the blacks seemed to be well cared for. All the blacks who die here are subjected to postmortem examination, and the per-

mission of the natives is never asked. In the children's ward I saw a child on whom tracheotomy had recently been performed for diphtheritic laryngitis and the little patient was well on the way to recovery. Intubation is not regarded with favor in this part of Africa, and when surgery has to be resorted to in cases of laryngeal stenosis, tracheotomy is the operation of choice. A laparotomy for pelvic inflammation was in progress in the plain, large, well-lighted operating room at the time of our visit. Operating gowns, masks and gloves are not often, if ever, seen in the operating rooms of the South African hospitals. The surgeons roll their sleeves up to the elbows, cleanse and disinfect their hands, put on aprons and then go to work. Several cases of injury from dynamite explosions and a number of fractures made up the bulk of the surgical material.

COMPOUND HOSPITALS.

By a compound is meant the enclosure of a mine in which the miners, usually Kaffirs, are confined as long as they are in the service of the company, which on an average is six months. No one can enter these compounds without special permission, and the miners are not permitted to leave the premises. Each of the five diamond mines employs from 2,000 to 2,500 blacks. The large square in which they live is surrounded by a wall. The sleeping places, butcher shop, stores and hospital are built all around against the wall, and in the large open space the blacks cook, eat, wash, smoke and play. I saw here a group of blacks who were smoking hemp, passing a large pipe from one to the other. Each of them took a large draught, retained the smoke for some time in the distended mouth, and then allowed it slowly to escape. At least two who were enjoying this vice, showed plain manifestations of intoxication.

Each compound has its own hospital and doctor. The building is constructed of corrugated iron, and has accommodation for about eighty patients. A dispensary and small operating room are to be found in each of these hospitals. The nursing is done by male attendants, but in one of the compounds a trained female nurse of mature age was at the head of the nursing staff, and it was in this hospital that the wards and bedding were cleanest.

The prevailing diseases among the miners are bronchitis, pneumonia and scurvy. Scurvy is very common and, as the physician of one of the compounds assured me, is due to the lack of vegetable food, which is very expensive here, and which the blacks refuse to buy in sufficient quantity on account of the high price, as they are anxious to save all the money they can to enable them to return to their homes as soon as possible. The most common injuries are burns and wounds from dynamite explosions and fractures. Among the interesting cases I saw here was a negro, the subject of multiple large keloids and an albino Kaffir. The man was about 30 years of age, with fair complexion, red curly hair and the characteristic eyes of the albino. I was informed that the average mortality from pneumonia in these compound hospitals is not less than 25 per cent. I saw and examined a number of cases during the acute stage of the disease, and in each of them the viscid rust-colored sputum was present.

It is not so very easy for the blacks to get into one of these compounds, as they have to undergo a thorough physical examination by a physician, but there is more ceremony connected with their getting out. Stealing of diamonds by the miners is an old trick and has cost the companies millions of dollars. All kinds of devices have been invented and practiced by the blacks to enrich themselves by stealing now and then a diamond which they find. To encourage honesty, the company pays each miner 10 per cent. of the value of the stones he finds, provided he delivers them at once to the manager. Notwithstanding this inducement, thefts are by no means rare even now with all possible precautions to guard against them. Some of the compounds are roofed in with wire netting to avoid all possibility of communication between the natives and the outsiders. The shrewd blacks will hide away diamonds in all avenues of their bodies whence they can be removed after they have left the compound. Against this method of pilfering the company now has instituted and enforces a measure well calculated to do away with this practice. When a black miner signifies his intention to leave the compound, he is put in a separate place and under guard, with others who are about to leave, and is subjected to repeated examinations for one week. Both of his hands are confined in stout leather mittens fastened with a lock at the wrists. This muffling of both hands prevents the temporary prisoner from grasping and disposing of any diamonds hidden in any part of his body, or the body of any of his companions. Each man is given a brisk dose of castor oil, the discharges are examined, and if at the end of a week no diamonds are found, he is given his liberty. In one compound I counted twenty blacks, lying side by side in a room, who were under observation prior to their departure. The physical condition of the men who leave the mines, after working on an average for six months, is much better than at the time of their entrance, as I had abundant opportunity to observe.

(To be continued.)

State Boards of Registration

COMING EXAMINATIONS.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

UTAH State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

IDAHO State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

MINNESOTA State Board of Medical Examiners, Old Capitol Building, St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harlson, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonio.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Kentucky July Reports.—Dr. J. N. McCormack, Secretary of the State Board of Health of Kentucky reports the following examinations: At the examination held at Louisville, July, 1906, the number of subjects examined in was 13; total number of questions asked, 120; percentage required to pass, 70, not less than 60 in any one branch. The total number of candidates examined was 17, of whom 11 passed, including 2 osteopaths, and 6 failed, including 3 osteopaths and 1 graduate in optics. The following colleges were represented:

PASSED. College.	Year. Grad.	Per Cent
Hospital Coll. of Med., Louisville	(1906)	72, 79
University of Louisville	(1906)	76
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	76
Barnes Med. Coll.	(1906)	74
Medical Coll. of Ohio	(1902) 82; (1906)	78
University of Pennsylvania	(1905)	85
University of Tennessee	(1906)	70

FAILED.

Hosp. Coll. of Med., Louisville.....(1903)	65
Univ. of Tennessee .....(1905)	55

At the meeting held July 16, 1906, the following were granted licenses to practice medicine without examination:

	Year Grad.	Total
Hosp. Coll. of Medicine, Louisville...(1896) 1;	(1906)	40, 41
University of Louisville .....(1887) 1;	(1894)	1, 2
Kentucky School of Med.....(1888) 1;	(1906)	6, 7
Louisville Med. Coll.....(1906)		1

At the meeting held July 22, 1906, the following were granted licenses to practice medicine without examination:

Louisville Med. Coll.....(1906)	4
Kentucky School of Med.....(1906)	2
University of Louisville .....(1899)	1

New Louisiana Officers.—We learn from Dr. Felix A. Larue, secretary of the Louisiana State Board of Medical Examiners, that on and after Oct. 1, 1906, the office of the board will be Room 502, Tulane-Newcomb Building, 211 Camp Street, New Orleans.

New Nebraska Rules.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, sends us the following resolutions which were adopted and approved by that board, Aug. 8, 1906:

Resolved, That after July 1, 1906, no one shall be allowed to practice medicine or osteopathy until a certificate has been issued by the Nebraska State Board of Health.

Resolved, That after July 1, 1906, no one shall be granted a certificate on reciprocity unless the applicant has been in active practice in the state, by whose board he is endorsed, for at least one year immediately preceding such endorsement.

West Virginia July Report.—Dr. H. A. Barbee, Secretary of the West Virgina State Board of Health, reports the oral and written examination held at Charleston, July 10-12, 1906. The number of subjects examined in was 9; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 79, of whom 52 passed and 27 failed, including 15 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
George Washington University.....(1904)		86
American Coll. of Med. and Surg., Chicago.....(1906)		82
Drake University .....(1905)		82
Louisville Med. Coll.....(1906)		97
Kentucky University .....(1906)		82, 86
University of Louisville.....(1906)		87
Hospital Coll. of Med. .....(1906)		87
Baltimore University .....(1905)		80, 80
College of P. & S., Baltimore (1903) 83; (1906) 81, 84, 85, 85, 89, 89, 92.		
University of Maryland.....(1906) 88, 93,		94
Maryland Med. Coll. .....(1905) 82	(1906)	86
Baltimore Med. Coll. .....(1906)		94
Barnes Med. Coll. .....(1906)		83
Leonard School of Med. .....(1895)		80
Medical Coll. of Ohio.....(1905) 82;	(1906)	84, 89
Starling Med. Coll. .....(1906)		85
Pulte Med. Coll. .....(1906)		91
Columbus Med. Coll.* .....(1882)		84
Eclectic Med. Inst., Cincinnati.....(1906)		81
Jefferson Med. Coll. .....(1905) 94;	(1906)	84, 88
University of Pennsylvania.....(1904) 86;	(1906)	90
Meharry Med. Coll. .....(1906)		83
Chattanooga Med. Coll. .....(1906)		82
Medical College of Virginia....(1902) 91;	(1906) 81, 86, 86,	94
University of Virginia .....(1898)) 88;	(1903) 90; (1906) 87,	88
University Coll. of Med., Richmond, Va.. ..(1906) 84,	85,	86

FAILED.

	Year Grad.	Number Exam'd.
Kentucky School of Med. .....(1905)		2
University of Louisville.....(1906)		1
Kentucky University .....(1904) 1;	(1905)	2
Baltimore University .....(1905)		1
Maryland Med. Coll. .....(1906)		3
Barnes Med. Coll. .....(1905)		1
University of the South.....(1904)		1
University Coll. of Med. .....(1897)		1

*Merged with Starling Medical College in 1892.

The following questions were asked:

PRACTICE OF MEDICINE (REGULAR AND HOMEOPATHIC).

1. Describe the tongue in typhoid fever; chronic gastric catarrh; biliousness and scarlet fever. 2. Cirrhosis of the liver: give symptoms and causes. 3. Give normal dimensions of the liver in mid-axillary and mammary line. 4. What is the pulse rate at birth, at five, ten, fifteen and twenty years? 5. What is arteriosclerosis and what are the symptoms? 6. Where is the apex beat of the heart felt? Where are the various murmurs heard? What causes the heart sounds? 7. What is fever? What is the normal temperature? Name a disease in which fever occurs. What is hyperpyrexia? What is a subnormal temperature? How control fever? 8. Vomiting: Describe the cause, mechanism and general therapy. 9. Physical diagnosis: (1) What is vocal fremitus? (2) What is vocal resonance? (3) What is a mucous râle? (4) What is a crepitant râle? (5) What is a friction murmur? 10. Give differential diagnosis between smallpox, chicken pox and pustular syphiloderm.

MATERIA MEDICA (HOMEOPATHIC).

1. Give indications for sepia in female trouble. Compare with pulsatilla. 2. In constipation, with no movement of bowels without cathartics or enema, what drugs are called for? Give indications. 3. What remedies are called for in dysentery. Give characteristics. 4. Give indications for rhus tox in typhoid. Compare with similar acting drugs. 5. Differentiate between cuprum-arsen. and merc. corr., in bowel trouble. 6. Mention four polychrests. Give characteristics of each. 7. Mention three remedies having a pathogenesis of green diarrhea and give characteristics. 8. Give indications for three remedies curative in nasal catarrh. 9. Differentiate gelsemium and natrum muriaticum in intermittent fever. 10. Give the therapeutic individuality of sulphur and phosphorus.

MATERIA MEDICA AND THERAPEUTICS (REGULAR).

1. Define materia medica and therapeutics. What is the difference between empirical and rational therapeutics? 2. Name four ways by which medicine may be introduced into the circulation. 3. Give a rule for calculating doses of medicine for children. 4. Name three drugs excreted by the mammary glands and which may affect the nursing infant. 5. From what source is ergot derived, and what is its most important physiologic action? 6. What is the difference between an abstract and an extract? What are expectorants, diaphoretics, diuretics? How do they act? 7. What is normal saline solution, how administered and in what conditions used? 8. Dose of salol. How disposed of in intestines? How eliminated? Symptoms of overdose. 9. Name one hydragogue cathartic, one intestinal antiseptic, one hypnotic, one antiseptic, give dose of each. 10. What are alkaloids? Name six important ones with dose.

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC).

1. Apocynum: Indications and uses. 2. Apis: Indications and uses. 3. Aralia: Indications and uses. 4. Belladonna: Indications and uses. 5. Cactus: Indications and uses. 6. Passiflora: Indications and uses. 7. Libradol: Indications and mode of application. 8. Aconite: Indications and uses. 9. Ipecac: Indications and uses. 10. Echinacia: Indications and uses.

PRACTICE OF MEDICINE AND PATHOLOGY (ECLECTIC).

1. Typhoid fever: Give etiology, symptoms, diagnosis and treatment. 2. Diphtheria: Give etiology, symptoms, diagnosis and treatment. 3. Give the early diagnosis of tuberculosis of the lungs and the treatment. 4. Appendicitis: Give medical treatment. 5. Lobar pneumonia: Diagnosis and treatment. 6. Smallpox: Give briefly the management and treatment. 7. Scarlet fever: State briefly the care and treatment until dismissed. 8. Rubeola: Give symptoms, diagnosis and treatment. 9. Malarial fever: Give etiology, symptoms, diagnosis and treatment. 10. Cholera infantum: Give symptoms, diagnosis and treatment.

PHYSIOLOGY.

1. Give reaction of the following fluids: Blood, milk, gastric juice, pancreatic juice, saliva, urine and perspiration. 2. In what tissues of the body is lime phosphate most found and its absence constitutes what diseases? 3. From what source are starch, glycogen and sugar derived? 4. What disturbances of digestion result from absence of bile? 5. What is the change in the air breathed, before and after inhalation? 6. Define sensitive nerve, motor nerve, mixed nerve. Give example of each. 7. What are the function and distribution of the fifth pair of nerves? 8. What is meant by nutrition? Define proximate principle. Give example. 9. Give composition and functions of the blood. 10. What is fat and how and where digested in the alimentary canal?

ANATOMY.

1. Mention the sutures at the vertex of the skull and state what bones they unite. 2. Mention any one muscle which moves the humerus (1) forward, (2) backward, (3) inward. 3. Describe the renal circulation. 4. Name the bones of the head. 5. Name the principal lobes of the brain and fissures dividing them. 6. Minutely describe the relations of the peritoneum to the bladder. 7. Describe the inguinal canal. 8. Locate and briefly describe the gall bladder. 9. Describe the female urethra as to (1) location, (2) dimensions, (3) structure. 10. What is contained in the right hypochondriac region?

CHEMISTRY.

1. Give names and formulæ of five acids used in medicine. 2. What is "rough on rats?" What is the antidote? 3. What is carbolic acid, physical and chemical properties, antidote? 4. What is arsenic, chemical properties, antidotes? How would you detect it in a solution? 5. Give test for formaldehyd in milk. 6. What are the constituents of normal urine? 7. Name all the different tests for albumin. 8. Name all the tests for sugar. Give formula for Fehling's solution. 9. What are carbohydrates? Name four. 10. What is an incompatible? Name three. What is an insoluble? Name three.

HYGIENE.

1. What is the difference between permanent and removable hardness of water? 2. What is the difference between contagion and infection? 3. Define the terms epidemic, pandemic and endemic. Name a disease of each. 4. How much cubic air space should be allowed each person in a sleeping room? Why? 5. What is the difference between antiseptics, disinfectants and deodorants? 6. Name five of the best disinfectants and explain their action and method of use. 7. What conditions of climate would you recommend for tuberculous patients? Does such a location exist in West Virginia? Explain. 8. What is the best method for preventing the spread of tuberculosis from a sanitary standpoint? 9. How would you prevent the spread of the following: Typhoid fever, diphtheria, scarlet fever and measles? 9. Should a person have gas lights, oil lamps, candles or growing plants in a sleeping room? 10. What is ventilation? Explain the difference between natural and artificial.

OBSTETRICS AND GYNECOLOGY.

1. What bones and ligaments form the obstetric pelvis? 2. Name all the female organs of generation. 3. Describe the stages of formation of embryo and its membranes. 4. Describe the fetal circulation. 5. Give the steps of a normal labor in a primipara? Multipara? 6. A patient with babe six weeks old calls you, she is suffering with pain and dragging in lower abdomen, is very tender, temper-

ature 102.5, a profuse discharge from vagina. On examination you find the uterus measuring five inches and lacerated on the left. Patient is a very sick woman, generally, womb soft and boggy. Treat. 7. Describe a case of placenta praevia centralis, give treatment. 8. Define eclampsia, give symptoms and treatment. What is the prognosis of eclampsia as to mother and child? 9. What constitutes the "bag of water?" What is its functions or office? Would you rupture? 10. Tell how to handle a case of abortion at second or third month.

BACTERIOLOGY.

1. How do you classify bacteria? Name three divisions. 2. What are the products of bacteria? 3. Do bacteria develop spontaneously? Does body temperature affect them. 4. How do micrococci grow? 5. Define sterilization. How obtained? 6. What is an antiseptic? The most effective. 7. Which contains the greatest number of bacteria, river water or ground water and why? 8. What methods are used to free drinking water from bacterial danger? 9. What theory has been brought forward to explain the resisting power of the human body against pathogenic invaders? 10. What factors influence the development of various pathogenic bacteria in the body?

SURGERY.

1. Inflammation: Define, name two common varieties. 2. What constitutes an exotosis, a neoplasm? What is a gumma? Cause, most frequent site and treatment. 3. Define, divide and treat hemorrhage. 4. Describe amputation at middle third of leg, naming important structures severed. Complete operation. 5. Aneurism: Define, give varieties and treatment. 6. Otitis: Define, classify, give cause and treatment. 7. Fracture: Define, classify and give symptoms. Describe and treat a Colles' fracture. 9. Dislocation: Define and classify. 10. Reduce a backward dislocation of humerus at shoulder.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Eczema.

In the treatment of eczema of the female genitals the following combination is recommended by von Schlen in the *Amer. Year Book of Med. and Surgery:*

℞ Ichthyoli ..... gr. xv 1
Pulv. amyli
Ung. zinci oxidi, āā ..... ℥iii 12
Lanolini ..... ℥vi 24

M. Ft. unguentum. Sig.: Apply locally to the affected parts.

In dry eczema of the scalp, neck and external genitals the following combination is recommended, using coal tar instead of wood tar:

℞ Picis carbonis (coal tar) ..... ℥iss 6
Alcoholis (95 per cent.) ..... ℥i 4
Spts. etheris sulphurici ..... ℥ss 2

M. Sig.: Apply locally with a brush.

In the treatment of professional eczema of the hands the following combinations are advised:

℞ Zinci oxidi ..... ℥ii 60
Pulv. cretæ
Lotio plumbi
Olei lini, āā ..... ℥ss 15

M. Ft. mistura. Sig.: Apply locally to the affected parts. Or:

℞ Zinci oxidi
Sulphuris sublim.
Cretal prep.
Olei lini, āā ..... ℥ss 15
Aquæ calcis, āā ..... ℥i 30

M. Sig.: Apply locally.

The foregoing combinations are of value in the milder forms of eczema. Previous to going to bed the patient should be instructed to cleanse his hands carefully and nails with soft soap if the eczema be dry, or with weak soapsuds if the eczema is moist, followed by thoroughly drying the hands and applying the ointment, and at the same time rubbing the hands until the ointment is completely absorbed. The hands should then be covered with gutta percha tissue, thin strips being wrapped around each finger. The whole hand should then be covered with wool-like mittens. The following morning the dressing should be removed, the hands cleansed and a small amount of the ointment again rubbed in for the day. After recovery is almost complete there will remain a few patches, which should be touched up with chrysarobin stick made up as follows:

℞ Chrysarobin ..... ℥ii 8
Lanolini ..... ℥iss 45
Ceræ albæ ..... ℥vi 24

M. Melt and pour into glass tubes and allow to cool. Sig.: Touch the affected areas two or three times a day.

The hands of those patients who are required to handle lime, plaster and cement must be protected during their work. This may be done by instructing the patient to rub his hands, before beginning his work, with tar diluted with castor oil and alcohol, as this combination is not only palliative and curative, but neutralizes the action of the lime.

In some cases the following combination is recommended to stimulate the corneous layer of the skin:

℞ Zinci oxidi ..... gr. xv 1
Lanolini
Resorcin, āā ..... ℥iiss 10
Cretæ prep ..... ℥ss 2

M. Ft. unguentum. Sig.: Apply locally.

In the treatment of chronic palmar eczema the following combinations are recommended by the *Medical Bulletin:*

℞ Olei cadini
Olei olivæ, āā ..... ℥ii 60

M. Sig.: Apply locally twice a day. And:

℞ Acidi salicylici ..... ℥i 4
Camphoræ
Chloralis hydratis, āā ..... gr. xv 1
Sulphuris precip ..... ℥i 4
Adipis benzoinatis, q. s. ad ..... ℥i 30

M. Ft. unguentum. Sig.: Apply locally after applying the oils as given.

Intestinal Dyspepsia.

Diarrhea and intestinal indigestion, according to Hemmeter in *Pract. Med. Series,* may be due to failure of gastric digestion, abnormal fermentative changes in the stomach, imperfect function of the pancreas, fermentation or putrefaction in the intestine.

The treatment is: 1. Dietetic, avoiding alcohol, tea, coffee and tobacco, and regulating the diet by excluding those articles which pass the intestines undigested or else give them in very small quantities and in a finely divided state. The experience of the patients is often a good guide. 2. In the treatment of constipation present the practitioner should decide whether it is due to spasm or atony, and in many cases this may have to be determined by therapeutic tests.

[In spastic constipation the patient has colicky pains, especially after eating sour foods, and when he has gone to stool there is a feeling of incomplete evacuation, the caliber of the stool is small, ribbon-shaped, as differentiated from the large caliber of the stool in atonic constipation.]

Care should be taken in the last meal of the day, as a heavy supper often produces a restless night. The treatment, according to Hemmeter, of the general neurasthenia should be electrotherapy, hydrotherapy, massage and baths.

Insomnia may be corrected by simply flushing out the colon. Hypnotics should be avoided if possible. As intestinal antiseptics in these cases the author recommends bismuth salicylate, subgallate, betanaphthol bismuth, thymol, menthol, resorcin and salol.

For putrefactive diarrhea with abdominal pain the following combination is recommended:

℞ Bismuthi subgal. ..... ℥ii 8
Salve ..... gr. xxiv 1 65
Ext. opii (denarcotized) ..... gr. iii 20

M. Ft. capsulæ No. xii. Sig.: One capsule before meals.

For the anexoria the following combination:

℞ Strych. sulph. ..... gr. 1/3 02
Acidi hydrochlor. dil ..... ♏ss 15
Ext. condurango flu ..... ♏iss 45
Elix. gentianæ ..... ℥vi 180

M. Sig.: One tablespoonful in two ounces of water one-half hour before meals, taken through a glass tube. Or:

℞ Tinct. nucis vom ..... ♏iiss 10
Tinct. card. co ..... ♏ii 60
Tinct. gent. co ..... ℥vi 180

M. Sig.: One tablespoonful three times a day before meals in a small amount of water.

Or, according to Boas, the following:

℞. Ext. nucis vom.....gr. vi | 40
Bismuthi subcarb.....3iiss | 10

M. Ft. chartulæ No. xx. Sig.: One before each meal.

Menche recommends the following combination:

℞. Resorcin resublim.....gr. lxxv | 5
Tincturæ rhei.....3ss | 15
Elix. simplicis, q. s. ad.....3iii | 90

M. Sig.: One tablespoonful twice a day before meals. Or:

℞. Resorcin resublim.....gr. lxxv | 5
Bismuthi salicylatis
Pulv. rhei
Sodii sulphatis, ää.....3iiss | 10
Sacch. lactis.....3iiiss | 14

M. Sig.: One teaspoonful before each meal.

When fermentation is present with anorexia the following formula after Ewald is advised:

℞. Tinct. nucis vom.....3vi | 24
Resorcin sublim.....gr. lxxv | 5
Elix. simplicis.....3iii | 12

M. Sig.: Ten to fifteen drops every two hours in a small amount of water. Or:

℞. Ext. condurango flu.....f3v | 20
Resorcin sublim.....3i | 4

M. Sig.: Thirty drops four times a day in water.

When anemia is present with the gastrointestinal symptoms the following combination is recommended:

℞. Quin. sulph.....gr. xviii | 1 | 20
Strych. sulph.....gr. 1/3 | | 02
Ferri sulph.....gr. xii | | 75
Acidi arsenosi.....gr. 1/5 | | 014

M. Ft. pil. No. xii. Sig.: One pill three times a day.

Tongue and Mouth in Typhoid Fever.

In considering the care of the tongue and the mouth in typhoid fever Shoemaker states that some of the gastrointestinal symptoms may be avoided. The mouth should be thoroughly cleansed after each feeding with an antispetic solution similar to the following combination:

℞. Creosoti (beechwood).....m. xv | 1
Aq. eucalypti.....f3vi | 180

M. Sig.: To be applied with a swab of absorbent cotton after each feeding.

When the lips become dry as well as the tongue the following application is recommended:

℞. Acidi citrici.....3v | 20
Syrupi limonis.....f3i | 30
Aquæ q. s. ad.....f3viii | 240

M. To be used as a mouth wash, diluted as necessary.

When the tongue becomes dry and brown the internal administration of turpentine will often be effective, given in the form of the official emulsion of the new Pharmacopeia, or as follows:

℞. Olei terebinthinæ.....3iv | 15
Olei amygdalæ exp.....m. lxxv | 5
Syrupi.....3vi | 24
Pulv. acaciæ.....3ss | 15
Aquæ q. s. ad.....3iiiss | 100

M. Sig.: One to two teaspoonfuls three or four times a day.

If there is any contraindication to its use, such as nausea or some kidney involvement, the author recommends that dilute nitric acid be given in five-minim doses (.30), well diluted in water, three times a day after food.

Medicolegal

Evidence in Action by Physician Against Administrator.

The Supreme Court of Colorado holds, in Temple vs. Magruder, a case where the latter-named party sought to recover against an administrator a judgment on a claim for medical services, that the physician's account book must be deemed a book of original entry, and would have been admissible in evidence had the preliminary proof required by the statute been made. But it holds that it was clearly error to permit the physician to testify in the case, because of the statute providing that "no party to any civil action, suit or proceeding, or person directly interested in the event thereof, shall be allowed to testify therein, of his own motion, or in his own behalf, . . . when any adverse party sues or defends as the . . . executor or administrator . . . of any deceased person . . . unless when called as a witness by such adverse party so suing or defending." By the plain and positive provision of this statute, the physician, the court says, was incompetent to testify in this case of his own motion, and over the objection of the administrator, on any matter, or at all.

Opinions of Unprofessional Observers as to Sanity.

The Supreme Court of Kansas says, in the case of Kempf vs. Koppa, that an unprofessional observer is competent to form a judgment and express an opinion on the sanity or insanity of one he knows. A fundamental qualification is that the witness shall have had adequate opportunities of observation of the conduct, declarations and appearance of the person whose sanity is in question. The weight and force of the testimony will depend on the extent of the opportunity, as well as the power and habits of observation possessed by the witness, and a consideration of all the circumstances under which the opinion was formed. The courts do not undertake to lay down a definite rule as to how closely the witness must have observed the person whose sanity is the subject of inquiry in order to be qualified as a witness, as even a casual observer may discover mental manifestations that would make his testimony valuable. Whether there is a fair basis for an opinion by a witness must be left largely to the trial court, and the jury, taking note of the opportunity and powers of observation of the witness, must then decide what weight and effect shall be given to his opinion.

Nature of State Board of Health and Its Acts—Powers—Revocation of Certificate.

The Supreme Court of Missouri says that in the case of State, on the relation of McAnally vs. Goodier and others, the relator (McAnally) asked for a writ of prohibition to prevent the State Board of Health proceeding in an investigation of charges of alleged improper conduct and revoking a certificate to practice medicine and surgery issued to him in 1883. Under the act of 1883 he was not required to have a certificate from the State Board of Health to entitle him to practice medicine, because he had been practicing for a period more than five years before the law was enacted, and he maintained that the board had no right to revoke the certificate issued to him, even if it should find after investigation that he was morally unworthy to exercise the high calling, because he said that the board had no right to issue it in the first place. But a complaint of that kind does not make a very persuasive appeal for a writ which, after all, is within the sound discretion of the court to issue or refuse independent of strict technicality, as the very right and justice of the case require. The certificate implied not only that the holder is learned in the science, but that he is, from a moral or ethical standpoint, worthy to be trusted. In this case, if the board, on investigation, should find the relator guilty of the charges preferred, the utmost it could do would be to cancel the certificate that it had itself issued, leaving the relator in full possession of what he said the law gave him independent of the board—that is, the right to practice medicine on his own merits; but it would not leave him armed with his certificate of good character from the State Board of Health. The relator had no right to hold that certificate if he was unworthy of the confidence it invited.

The relator complained that the board was going to try him without exercising compulsory process to bring before it the witnesses he needed for his defense. But the State Board of Health is not a court—is not a judicial tribunal. It can issue no writ. It can try no case—render no judgment. It is merely a governmental agency, exercising ministerial functions. It may investigate and satisfy itself from such sources of infor-

mation as may be attainable as to the truth or falsity of charges of misconduct against one holding one of its certificates, but its investigation does not take on the form or character of a judical trial. The law does not contemplate that the technical rule of evidence applicable to a judicial trial will be strictly followed, or that compulsory attendance of witnesses will be made. It contemplates that a plain, honest, common-sense investigation shall be made, with good faith and as thorough as may be with the light of such evidence on either side as is obtainable without process and with the means at hand, much like the investigation that fair-minded, intelligent men would make in their own business concerning the alleged misconduct of one of their employés, with this difference only, that the board can not revoke the license except for cause and after the accused has had an opportunity to be heard.

The statute says the board may refuse to issue the certificate, or may revoke it after it has been issued, if the man is unworthy. This implies that the board may have some information of misconduct of an applicant which would justify a refusal to issue the certificate, or, after the certificate is issued, that would justify its recall, and in either case the board is authorized to act, "after giving the accused an opportunity to be heard." Those are the only words that suggest a trial, and they fall far short of a judicial trial. To guard and protect the health and welfare of its people the state must have its ministerial agents or officers and intrust them with power. If every administrative act that looks to the enforcement of the law should be required to be reduced to the compass of a lawsuit and be put into effect only after a court had at the end of a formal trial stamped its judgment on it, the government would make slow progress. There must be trust reposed somewhere and the power to execute the law. The General Assembly has taken great care to secure trustworthy men to perform the duties that are devolved on the State Board of Health. The duties of the board are of an administrative or ministerial character, and, therefore, as long as its acts are within the scope of the exercise of a reasonable discretion it is free to act. If perchance, through a misunderstanding of the law, the board should refuse to perform a given duty, the writ of mandamus will right the wrong, but the writ of prohibition does not go against such a body. It goes only against a court or a tribunal exercising judicial functions.

In other words, the court holds in this case that the state board of health is not a judicial body; that it has the power to revoke a license or certificate issued by it if, after investigation, in which the licensee is afforded an opportunity to be heard, it is satisfied that he has been guilty of unprofessional or dishonorable conduct; and that, in conducting such investigation (or "trial," if that term is preferred), it is not assuming to exercise a judicial function. Therefore a writ of prohibition does not lie to prevent the investigation.

Damages Recoverable for Wrongful Death of Physician.

The commissioner, whose report is affirmed by the United States District Court, in Pennsylvania, in the case of Ward vs. Dampskibsselskabet Kjoebenhavn, an action to recover damages for the wrongful death of a physician, says that no cases were called to his attention, and his search had not disclosed any, in which the amount of compensation for the death of a physician under similar circumstances was determined. The physician in question, Dr. John M. B. Ward, was at the time of his death 39 years of age. He had been a physician for twelve years. For the last eight years he had been an assistant quarantine physician, selected for his competency. Prior to his appointment as assistant quarantine physician, he had been elected to a position on a hospital staff, devoting his time to bacteriology. At the time of his death he was in receipt of an annual salary of $2,000 and the use of a house and other perquisites estimated of the value of $1,000 more per year. His personal expenses were estimated at $1,000 a year, leaving $2,000 as the yearly sum that his widow and children were deprived of by his death. Under these circumstances the commissioner thinks an award of $25,000 damages proper; and the court concurs therein.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

1 *Mysteries and Sources of Suicide. G. M. Gould, Philadelphia.
2 Shock. L. Waite, Chicago.
3 *Pleurisy with Effusion and Pulmonary Tuberculosis. H. F. Stoll, Hartford, Conn.
4 *Acute Mastoiditis, Its Prevention, Diagnosis and Treatment. J. J. Thomson, New York.
5 *Hay Fever and Persistent Bronchial Asthma Relieved by Treatment Directed to the Antrum of Highmore. J. E. Schadle, St. Paul, Minn.
6 *Possible Danger in the Therapeutic Use of Osmic Acid. A. E. Hertzler, Kansas City, Mo.

1. **Mysteries and Sources of Suicide.**—Gould calls attention to the important part which he believes eyestrain plays in suicide. He thinks that the most convincing and striking proof of the theory of this influence in producing suicide pertains to the time of life at which the numbers of suicides increase, reach their acme and decline. Presbyopia with its doubling and trebling of eyestrain, according to Gould, occasions the increased disease and suicide at the ages of from 40 to 60 years. Gould cites specific instances of victims of eyestrain.

3. **Pleurisy and Pulmonary Tuberculosis.**—Stoll concludes that all effusions within the pleural cavity are to be considered grave, as a large majority of them are of tuberculous origin. Although a positive history is most important, a negative one is valueless in excluding tuberculosis. In the absence of a pneumonia or a septic condition he considers the very presence of a pleural exudate sufficient to raise the question of tuberculosis. Patients with pleuritis should be told that the affection is probably due to the tubercle bacillus. They should be assured that they will get well, but they should be warned to take especial care of their health for a number of years.

4. **Acute Mastoiditis.**—Thomson says that the best preventive treatment of this condition is to keep the patient in bed for several days. A good cathartic is indicated. As soon as there is any bulging, an early and free incision should be made in the membrana tympani.

5. **Hay Fever and Persistent Bronchial Asthma.**—Schadle reports the case of a patient who had been suffering for almost two years with hay fever and asthma. Both antral cavities were irrigated with a warm boric acid solution until the return fluid was clear and free from sediment. The sinuses were then freely insufflated with thymol iodid. This treatment was continued for five days. On the third day the symptoms disappeared. The environment was not changed, nor was any treatment given other than that mentioned.

6. **Danger in Use of Osmic Acid.**—Hartzler states that when a dilute solution of osmic acid is injected into the free peritoneal cavity, particles are carried to the kidney, as in the case of silver chlorid, with the small accompanying hemorrhages. Although the small amount of osmic acid used in the treatment of neuralgia is probably not great enough to jeopardize life, still there is a limit to the amount of the chemical which can be used safely in therapeutics.

New York Medical Journal.

September 8.

7 *Cholelithiasis. C. Beck, New York.
8 Case of Sacroteratoma. S. Leobold and L. B. Phillips, Inwood, N. Y.
9 *Deep Breathing as a Therapeutic and Preventive Measure in Certain Diseases of the Lungs. J. H. Pryor, Buffalo.
10 Diagnosis of Gastric Ulcer. H. Weinstein, New York.
11 *Cure of Tuberculosis of the Joints. E. A. Tracy, Boston.
12 Relation of the Physician to Sanitation and Hygiene. H. P. Sights, Paducah, Ky.
13 Résumé of Recent Work in Clinical Pathology of the Urine. T. W. Hastings, New York.
14 X-Ray in Splenic Enlargements. C. Eastmond, Brooklyn.

7. **Cholelithiasis.**—In his discussion of the clinical history of cholelithiasis, Beck lays particular stress on the diagnosis of this condition by means of the Roentgen ray, which has proven very satisfactory in his experience, and describes his method of operation.

9. Deep Breathing.—Pryor makes an earnest plea for deep breathing as a therapeutic measure of the first magnitude in the treatment of malnutrition characterized by that complex group of symptoms ascribed to neurasthenia, toxemia, indigestion, anemia, gout, and in affections of the lungs and pleura. He says that deformities due to rickets and spinal curvatures are often susceptible of great improvement by combined exercise of the lung and special gymnastics. In delayed consolidation, incomplete resolution, imperfect restoration of function accompanying or following pneumonia; partial consolidation, collapse or carnification of the lung, associated with or resulting from pleurisy with effusion; bronchiectasis and adhesions of the pleura, deep breathing is particularly beneficial. Breathing exercises must be taught and watched to be effective. The lungs should be filled from bottom to top. The object to be attained is increase of the tidal and supplemental, and a decrease of the residual air. If coughing is produced by deep breathing, it is usually beneficial and assists in distending unused lung tissue, stretching or tearing adhesions and dislodging secretion.

11. Tuberculosis of Joints.—Tracy pleads for the employment of correct principles in the treatment of tuberculosis of joints consisting of the fixation of the joint, protection of the joint from weight bearing, and good constitutional treatment. He reports 16 cases.

Boston Medical and Surgical Journal.
September 6.

15 Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. (To be continued.) V. C. Vaughan, Ann Arbor, Mich.
16 Child and the Public School Curriculum. T. F. Harrington, Lowell, Mass.
17 Observation Hospitals or Wards for Early Cases of Mental Disturbance. L. V. Briggs, Boston.
18 *Appendicostomy and Cecostomy for the Relief of Chronic Diarrhea. S. G. Gant, New York.

18. Appendicostomy and Cecostomy in Chronic Diarrhea.—Gant gives his personal experience in the treatment of 9 cases of persistent ulcerative colitis and chronic diarrhea by means of appendicostomy or cecostomy. In 8 of these cases the appendix was brought up, attached to the skin and opened in order to permit through-and-through irrigation. In the remaining cases the cecum was opened and a catheter introduced, after the method of Gibson, for the same purpose. Gant's experience with these operations has been most gratifying. He says that the operation of appendicostomy is comparatively simple, can be performed quickly and is no more dangerous than is the interval operation for appendicitis. Gant opens the abdomen by a short intermuscular or gridiron incision such as is made for appendectomy. He says further:

> The appendix is located, freed if adherent, brought outside the abdomen, opened and a probe inserted to make sure of its patency. If found to be too short, strictured or otherwise unsuitable, it should be removed and a cecostomy substituted. If, however, the appendix is sufficiently long and patent, it is ligated and cauterized. The cecum at its base is sutured to the abdominal wall and the parietal peritoneum, muscles and skin closed with plain catgut sutures. The appendix is anchored to the skin by one or two sutures and the wound covered with protective tissue and gauze held in place by adhesive plaster. In some cases the meso-appendix is left intact, while in others the artery is ligated and the peritoneum stripped off, but apparently neither method has any advantage over the other. Usually the part of the appendix external to the ligature sloughs about the fourth or fifth day, leaving the open stump projecting about one-fourth of an inch above the skin.
>
> The irrigations are begun immediately, using saline solution, ice water, or solutions of boracic acid, potassium permanganate, carbolic acid, ichthyol, bichlorid of mercury, or nitrate of silver. In practically all cases the abdominal discomfort and frequent evacuations cease immediately after the operation, or after the first irrigation, and within a few days the stools become almost normal, containing but little blood or mucus. It appears to make but very little difference what irrigating fluid is employed, provided that it is used daily and in sufficient quantity to cleanse the bowel thoroughly.

The only unpleasant sequela in Gant's series of cases was a small ventral hernia.

Lancet-Clinic, Cincinnati, Ohio.
September 8.

19 Albuminuria. J. H. J. Upham, Columbus.

St. Louis Medical Review.
September 1.

20 Hemoptysis as a Sequela of Epileptic Convulsions. W. Spratling, Sonyea.
21 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

Surgery, Gynecology and Obstetrics, Chicago.
August.

22 *Pulsating Exophthalmos. J. Ransohoff, Cincinnati.
23 Medico-Military Notes in Manchuria. J. V. Hoff, U. S. Army.
24 Practical Bacteriologic Studies in the Surgical Clinic. W. G. Macdonald, Albany, N. Y.
25 *Use of Thyroid Extract to Shorten Coagulation-Time of the Blood. W. J. Taylor, Philadelphia.
26 Case of Traumatic Hemorrhage into the Left Lateral Lobe of the Cerebellum; Operation; Recovery. H. A. Ballance, London, England.
27 Acute Intussusception in Young Children. E. Eliot, Jr., New York.
28 *Cancer of the Sigmoid and Rectum. C. H. Mayo, Rochester, Minn.
29 *President's Address Before the American Surgical Association. A. Vander Veer, Albany, N. Y.
30 *Treatment of Congenital Dislocation of the Hip by Incision. E. H. Bradford, Boston.
31 *Open Treatment of Fractures. E. Martin, Philadelphia.
32 Experiences in the Operation of Thyroidectomy, Partial and Complete. F. J. Shepherd, London, England.
33 *Surgery of the Large Intestine. G. E. Armstrong, Montreal, Canada.
34 *Surgery of Carcinoma of the Upper Portion of the Rectum and the Sigmoid Colon. J. C. Bloodgood, Baltimore.
35 History of Our Knowledge of Aspiration Drainage in Empyema and Other Surgical Conditions. J. D. Bryant, New York.
36 *Hyperplastic Tuberculosis of the Intestines. G. B. G. De Nancrede and E. E. Butterfield, Detroit.
37 *Cancer of the Colon. W. Meyer, New York.
38 *Surgery of Tuberculosis of the Colon. L. L. McArthur, Chicago.
39 *Serum-Therapy of Tetanus. C. A. Porter, Boston.
40 *A New Method of Utilization of the Sac in the Radical Cure of Hernia. R. Park, Buffalo, N. Y.
41 *Satisfactory Vesical Evacuator. H. A. Kelly, Baltimore.
42 *Technic in Caring for the Umbilical Cord and Navel. T. M. Barns, Denver.

22, 36, 39.—See THE JOURNAL, July 14, 1906, page 147.

25, 29, 30, 31, 40.—See THE JOURNAL, July 7, 1906, pages 66 and 67.

28, 33, 34, 37, 38.—See THE JOURNAL, June 30, 1906, page 2016.

41. Vesical Evacuator.—For several years past Kelly has made use of an evacuator in order to empty the bladder of the last drop of urine when the patient is in the knee-chest position, which is in all respects satisfactory. The evacuator is made up of a tube 18 cm. long in its straight portion and 8 cm. long beyond the bend. It consists simply of a bent tube 3.5 mm. in diameter, through which the urine is drawn by a suction bulb into a suitable glass receptacle. The inside diameter of the tube is a little over 2 mm. in diameter. A cap which screws on the end of the tube is used to push down into the vertex of the bladder as the suction is applied, when there is a free and rapid flow from the vesical vertex into the glass bottle held below the level of the bladder. A little flange near the outer end serves to give the fingers a firm hold.

The value of this simple little instrument is said to be twofold; in the first place, it serves to remove any urine which has not been passed or removed by catheter before putting the patient in the knee-chest position. A few drams of water lying in the vesical vertex may easily prove a source of much annoyance to the examiner—above all, if the patient is not in a good posture. Furthermore, if the operator desires to collect urine from one kidney by means of the ureteral catheter, while at the same time he is collecting the urine from the opposite kidney transvesically by means of a vesical catheter, under these circumstances it is most important to empty the bladder thoroughly just before catheterizing the ureter, in order that the urine which runs into the bladder and then out through the vesical catheter may really represent the kidney not catheterized. Such a method of examining the uncatheterized kidney is always valuable as a means of determining the urea coefficient. It may be valuable, too, for a microscopic and a bacteriologic examination, provided the bladder itself is sound.

42. Caring for Umbilical Cord and Navel.—Burns' method differs from those in general use; 1, In the use of a ligature close to the skin covering of the cord; 2, in the arrangement of the gauze; 3, in the absence of any antiseptic powder; and 4, in the use of cotton between the abdominal band and the genitals. Five minutes after the child is born the cord at the juncture of the skin and amniotic coverings is tied with a silk ligature (No. 10 or 12 twisted silk, or a doubled piece of

knitting silk). The ligature is drawn very tightly, so as to compress the deeply situated blood vessels. Two inches from the navel the cord is clamped with a pair of hemostatic forceps (Pean's five-inch long bite). The cord is held away from the child's genitals by the hemostatic forceps and cut one and a half inches from the navel with an angular pair of scissors. The placental end of the cord is carried by means of the hemostatic forceps to the Kelly pad. Wharton's jelly is squeezed out of the cord by grasping the cord near the navel with the fingers of one hand and stripping with the fingers of the other hand. The cord is tightly ligated one inch from the navel, then the ends of the ligature are carried around the cord to the side opposite the knot and tightly tied.

After the child is washed, the cord and navel region are bathed with a saturated solution of boric acid and wiped perfectly dry. A strip of sterilized gauze of four layers is cut to the size of 7 by 3½ inches. In one-half of this, at about the center of the junction of the lower with the middle third, a hole is cut and the cord passed through it and laid upward on the gauze. The other half of the gauze is folded over the cord. A piece of absorbent cotton is placed above the gauze and the band applied. Between the band and the genitals a piece of cotton is placed to prevent the urine from soiling the dressing. The method has been used with the very best results in the last 100 cases attended by the author, and no harmful effects have been noticed.

Albany Medical Annals.

September.

43 Subacute and Chronic Vesiculitis. J. W. Wiltse, Albany.
44 *A Brace to Aid in the Treatment of Flat or Weakened Feet. J. M. Berry, Troy, N. Y.
45 Professional Circumspection. E. Oliver, Aneram, N. Y.
46 Modern Scientific Medicine and Its Relation to Union University. J. D. Craig, Albany.

44. Brace for Flat or Weakened Feet.—The brace employed by Berry consists of two parts, a supporting portion (A) and a base piece (B). (C) represents the tongue portion of the support, which fits into the slot in the base piece marked (D).

The supporting portion is made of No. 16, 18 or 20 (depending on the weight of the patient) tempered galvanized steel fitted over a plaster-of-Paris model of the arch of the foot. It supports the arch of the foot and projects high up on the inner side of the foot so that when worn with a properly constructed lace shoe it exerts firm lateral pressure on the foot, thus preventing lateral deformity. It does not cover any of the weight-bearing portion of the heel or ball of the foot and is attached to the base piece in such a manner that it is movable in every direction, thus allowing all motions of the foot to take place. In other words, it supports and holds in position the arch of the foot with the smallest amount of splinting. The base piece serves simply to hold the supporting portion in place. It is made of flexible spring brass so that it readily conforms to the shape of the bottom of the shoe, and when it slips into place in the heel of the shoe the arch supporter is in its correct position.

The method of taking the plaster cast for the brace in question is as follows: The patient sits with the knee flexed and resting on a support in such a way that the outer surface of the foot rests against an upright support. The foot presses closely but not too firmly against the upright support, thus leaving a space between the foot and the support corresponding to the arch of the foot. The support is tilted somewhat to allow the position to be assumed by the patient more comfortably. The arch of the foot is first coated with vaselin to prevent the plaster adhering and with a dermatographic pencil the outline of the brace is drawn on the foot, special care being used in marking out the anterior and posterior limits and the height to which the brace rises laterally. The foot is now put in position on the support and the space represented by the arch of the foot filled with plaster cream. The plaster hardens in a few moments, and on removal the outline made with the dermatographic pencil will be found to have been transferred to the plaster. Any imperfection in this negative cast can be filled with plaster cream, and after this has hardened, the surface is coated with vaselin, the outline of the brace freshened and a positive cast made, especially necessary in all cases where the arch is very low or where edema or swelling has partially obliterated the arch. The cast is now sent to the instrument makers and the steel plate fitted to the outline.

International Journal of Surgery, New York.

September.

47 Retrodeviations of the Uterus. A. J. Walscheid, Union Hill, N. J.
48 *Prolapsus Ovari in Femoral Ring, Simulating a Strangulated Femoral Hernia. T. W. Parsche, Chicago.
49 Logic of Abdominal Pain. J. L. Wiggins, East St. Louis, Ill.
50 Case Illustrating the Association of Pelvic Disease with Appendicitis. R. S. Joyce, Ogden, Utah.
51 Preliminary Tracheotomy in Operations About the Tongue and Pharynx. B. G. Copeland, Birmingham, Ala.
52 Appendicitis—Hypospadias—Cervical Adenitis—Cystic Ovary. G. E. Woolsey, New York.
53 Appendicitis. R. T. Morris, New York.
54 *A New Splint for Fractures of the Humerus. G. G. Marshall, Wallingford, Vt.

48. Prolapsus Ovari in Femoral Ring.—Parsche reports a case of femoral hernia of the ovary occurring in a woman who had a tumor in the femoral region for 14 years, causing her no distress until she over-exercised and the hernia of the ovary became strangulated.

54. New Splint for Fractures of Humerus.—Marshall's splint consists of two thin pieces of board fastened to each other at right angles by their long edges. One, longer than the other, is 15 inches long by 3½ inches wide; the other is 11 inches long by 3 inches wide. In the angle at the lower end is fitted a square piece of material with a slot cut through it near its outer end. Surmounting the upper end of the shorter side of the splint, is fastened a crutch piece to fit the axilla. This piece is also curved forward so that the end will not crowd on to the chest, as the arm rests across the body. When the splint is in position the crutch piece fits closely in the axilla, and the longer side supports the posterior aspect of the arm, while the shorter one supports the inside of the arm. The square at the lower end of the splint extends from 2 to 4 inches below the elbow, according to the length of the arm. Strips of adhesive plaster are applied, one to the inside and one to the outside of the arm, extending up to the point of fracture. At the elbow the strips are folded on themselves so as to cover their adhesive surfaces, and the inner one passed through a slit in the lower end of the piece; the outer strip is passed through a similar slit in the square piece, the two ends drawn tightly and tied. This gives strong extension in the line of the shaft of the humerus. This splint is of special advantage in compound fractures of the humerus as the dressings may be removed without weakening the extension.

Texas State Journal of Medicine, Fort Worth.

September.

55 Management and Treatment of Pulmonary Tuberculosis at a Climatic Resort. B. Cornick, San Angelo.
56 Etiology and Treatment of Movable Kidney. F. W. Kirkham, Cuero.
57 Malarial Keratitis. F. D. Boyd, Ft. Worth.
58 *Drains and Drainage. C. E. Cantrell, Greenville.
59 When Ovarian Cystomata Should be Removed Without Puncturing or Opening. F. D. Thompson, Ft. Worth.
60 Early Treatment of Pneumonia. C. A. Gray, Bonham.
61 Creosote in Tuberculosis. J. C. Carleton, Boston.

58. Drains and Drainage.—To dilute the waste matter coming from the rapid changes that ordinarily follow a surgical operation, Cantrell fills a water-bag with normal salt solution and hangs it eight to ten inches above the patient, adjusts the long vaginal nozzle, that has numerous openings, into it so that as the water passes in at some, gas that may want to escape may pass out at others. This is inserted into the rectum and held in place with strips of adhesive plaster passed around the nozzle and then made fast to the patient, the

water is turned on slowly. Cantrell says that it is surprising the quantity that may be taken up in this manner with little or no discomfort, thus facilitating drainage through the natural channels, as well as supplying the necessary fluids otherwise needed.

Journal of Experimental Medicine, New York.
August.

62 *Study of Epidermal Fibrils. R. L. Thompson, St. Louis.
63 *Influence Exerted on the Virulence of Carcinoma in Mice by Subjecting the Tumor Materials to Incubation Previous to Inoculation. G. H. A. Clowes and F. W. Baeslack, Buffalo.
64 *Studies on Calcareous Degeneration. O. Klotz, Montreal.
65 *Pathogeneesis of Experimental Colitis and Relation of Colitis in Animals and Man. S. Flexner and J. E. Sweet, New York.
66 Solution of Tissue with Abscess. E. L. Opie, New York.
67 *Simple Method for Plating of Anaërobic Organisms. H. Zinsser, New York.
68 Influence of Colloids on the Diffusion of Hemolysins. S. Flexner and H. Noguchi, New York.

62. Epidermal Fibrils.—Thompson found that in certain animals, in addition to the protoplasmic fibrils of the stratum filamentosum that are present normally in human epidermis, there are well-developed fibrils in the cells of the stratum germinativum. These fibrils are present in the human epidermis only under conditions of increased cell activity. These fibrils, that are prominent in the stratum germinativum of human epidermis under conditions of increased cell activity, seem to increase in direct ratio to rapidity of cell production. The differentiation of these fibrils of the stratum germinativum into the finer fibrils which connect the cells of the stratum filamentosum can be observed under proper conditions of growth and therefore there should be no separation of the fibrils into different groups with various names. This process of fiber production by the cells of the human epidermis is analogous to increased fiber production by various other cells under similar conditions, and may be of importance in identifying or classifying new growths of epithelial origin.

63. Effect of Incubation on Tumor Cells.—The experience of Clowes and Baeslack with mouse tumors has demonstrated that a great difference exists not only in the relative immunity possessed by different individuals, but also in the relative virulence of different tumors all owing their origin to the same source. The variations in question can be accentuated by incubation of the transplantation materials previous to inoculation at temperatures varying from 37 to 41 C. In the case of extremely virulent tumors giving a yield of over 60 per cent. under normal conditions, a distinct and gradual fall in virulence accompanies increasing temperatures of incubation until a point is reached at which no further tumors are obtained. On the other hand, relatively inactive materials giving comparatively small yields of tumors under normal conditions may be so stimulated by subjecting them to incubation at suitable temperatures as to afford a large yield and relatively more rapidly growing tumors than were obtained in the normal series. Those tumors which give a small yield under normal conditions, but which give an increased yield on incubation, are either rapidly growing young tumors, or small and hard tumors, or tumors that have been extremely slow in their development, and have in certain cases exhibited indications of a tendency to undergo spontaneous recovery. Those tumors which on inoculation give a large yield at normal temperatures and a gradually decreasing percentage of tumors in the batches inoculated with materials which have been incubated at increasing temperatures are generally fully grown tumors which have developed rapidly and come of a relatively active strain.

64. Calcareous Degeneration.—The methods employed by Klotz resemble those of previous investigators. A pure solution of adrenalin chlorid, 1 to 1,000, was injected into the ear veins of rabbits. Microscopic lesions, such as dilatation of the blood vessels, hemorrhages in the brain and aneurismal distensions of the larger vessels, were noted. The most frequent lesions were situated in the descending arch of the aorta, where white calcified plaques formed the chief naked-eye alterations. The aneurisms were found to be situated in the centers of these white plaques which have been described by some as atheromatous areas. Histologic examination shows that these plaques, at on early stage, are situated entirely in the media and that the calcification which occurs here is the secondary result of a degenerative, chiefly fatty, change which takes place in the media. Calcification is never found in the intima, and only rarely are there any intimal changes. The intimal changes which occur are of two kinds; either there is a local heaping up of endothelial cells at a point where no degenerative changes of any kind have taken place, or there is a thickening of the intima underneath the endothelial cells, chiefly due to proliferation of the connective tissues, in which slight fatty changes may occur. Such being the case, Klotz believes that the term atheroma must be discarded in describing the experimental arterial lesions in rabbits.

65. Colitis in Man and Animals.—Flexner and Sweet state that the toxin of the Shiga dynasty bacillus is liberated from the bacillus through the process of autolysis. In rabbits the toxin is not absorbed directly in an active form by the gastro-intestinal tract; in man, however, absorption of an active poison does take place from the intestine. The toxin is excreted in rabbits, and probably in man as well by the intestine, chiefly probably by the large intestine, which being injured by the act of elimination, reacts by the development of inflammation, etc. In rabbits the characteristic action of the toxin depends on the integrity of the biliary secretion into the intestine. When the bile is prevented from entering the intestine, either by ligature and section of the duct or by establishment of a biliary fistula, no lesions whatever of the large intestine appear, or they are inconsiderable in extent. The loss of toxin through a biliary fistula does not prevent in rabbits the lethal effects which are caused, apparently, by a nervous poison. The tying off of the bile duct seems to prevent the passage of the toxin in amounts sufficient to cause the large intestinal lesions into the blood. The liver, therefore, in this condition tends to hold back the toxin from the general circulation. The peculiar effects of the toxin on the large intestine in rabbits is not produced at once, but would appear to depend on successive acts of excretion of the poison by the bowel. The establishment of biliary fistula reduces the intensity of action of corrosive sublimate on the large intestine in rabbits; and the lesions of ricin poisoning in these animals are also modified by this operation. Dysentery toxin is destroyed by peptic digestion, and also, though probably more slowly, by tryptic digestion. The absence of power of the toxin to cause poisoning in rabbits when it is brought directly into the lumen of the intestine, is not explained by the destructive action of trypsin. The character of the histologic changes in the cecum of rabbits caused by the dysentery toxin, points to an action on the substance and not primarily on the surface of the intestine.

67. Method for Plating Anaërobes.—The method described by Zinsser, besides being a facile one for separation, permits the assumption of absolute anaërobiosis. The apparatus used consists of two circular glass dishes fitting one into the other as do the halves of a Petri dish, and similar to these in every respect, except that they are higher, and that a slightly greater space is left between their sides when they are placed together. The dishes should be about three-fourths to one inch in height, they need be of no particular diameter, although those about the same size as the usual Petri dishes are most convenient. The sole requirement necessary for successful plating is that the trough left between the two plates when put together shall not be too broad, a quarter of an inch being most favorable. Into the smaller of these plates the inoculated agar is poured exactly as is done into a Petri dish in the ordinary anaërobic work. Prolonged boiling of the agar before plating is not essential. When the agar film has become sufficiently hard on the bottom of the smaller dish, the entire apparatus is inverted. The smaller dish is now lifted out of the larger and placed, still inverted, over a moist surface—a towel or the wet surface of the table—to prevent contamination. Into the bottom of the larger dish, which now stands open, there is placed a quantity (1 to 2 drams) of dry pyrogallic acid. Into this, over the pyrogallic acid, the smaller dish, still inverted, is then placed. A strong solution of sodium hydrate is poured into the space left between the sides

of the two dishes, in quantity sufficient to fill the receiving one half full. While this is gradually dissolving the pyrogallic acid (and this is the only step which requires speed) albolin, or any other oil, is dropped from a pipette, previously filled and placed in readiness, into the same space, thus completely sealing the chamber formed by the two dishes. If these steps have been performed successfully the pyrogallic solution will at this time appear of a light brown color and the small plate with its agar film will float unsteadily above the other. Very rapidly, as the pyrogallic acid absorbs the free oxygen in the chamber, this plate is drawn down close to the other, and the acid assumes a darker hue, which remains without further deepening even after three or four days' incubation.

Archives of Ophthalmology, New Rochelle, N. Y.

July.

69 Epithelial Formation in the Iris. E. L. Oatman, Brooklyn, N. Y.
70 Case of Melanosarcoma of the Choroid and Orbit. E. L. Oatman, Brooklyn.
71 Traumatic Lacteration of the Inferior Rectus Muscle. H. Moulton, Ft. Smith, Ark.
72 Case of Orbital Endothelioma. J. M. Cooper, Detroit, Mich.
73 Glioma of the Retina. S. C. Ayres, Cincinnati.
74 Pigmentation of the Retina After Optico-Ciliary Neurectomy in Man. T. F. Studer.
75 Posterior Sclerotomy as a Preliminary to Iridectomy in Acute Glaucoma. A. Knapp, New York.
76 Two Cases of Osteoma of the Orbit Successfully Treated by Operation. A. Knapp, New York.
77 Eye Infection, Three Hundred Cases with Bacteriologic Examination. D. Smith, Bridgeport, Conn.
78 Rare Case of Thrombosis of the Cavernous Sinus Following Orbital Thrombophlebitis. F. Stocker, Lucerne.

The Philippine Journal of Science, Manila. Supplement II.

June 15.

79 New Philippine Ferns. E. B. Copeland, Manila.

The Philippine Journal of Science, Manila.

July.

80 Rinderpest. P. G. Woolley, Manila.
81 Preliminary Geologic Reconnaissance of the Loboo Mountains, Batangas Province. W. D. Smith, Manila.
82 Vegetation of the Lamao Forest Reserve, II. H. N. Whitford, Manila.
83 Catalogue of Philippine Hymenoptera, with Descriptions of New Species. R. E. Brown, Manila.
84 Notes on Birds Collected in Mindoro and in Small Adjacent Islands. R. C. McGregor, Manila.

California State Journal of Medicine, San Francisco.

July.

85 Indications for and a Description of the Mastoid Operation. H. Hastings, Los Angeles.
86 Medical Licensure. S. D. Van Meter, Denver.
87 Recognition of Affections of the Upper Air Passages in School Children. E. Mayer, New York.
88 Etiology of Embolism. W. H. Flint, Santa Barbara.
89 Diet and Hydrotherapy in the Treatment of Rheumatism and Gouty Conditions. R. Crees, Paso Robles.
90 *Proprietary Medicines. G. H. Simmons, Chicago.

90.—See THE JOURNAL, May 5, 1906, page 1333.

Woman's Medical Journal, Toledo, Ohio.

August.

91 Dysmenorrhea in Young Girls. J. Ghrist, Ames, Iowa.
92 Timidity. M. K. Isham, Cincinnati.

Ophthalmic Record, Chicago.

August.

93 Observations on Methods of Advancement. J. E. Cogan, Cleveland, Ohio.
94 Critical Review of the American Railway Association's Rules Governing the Visual Qualifications of Employés. N. M. Black, Milwaukee.
95 Concerning the signs in the Retina of Persistent High Arterial Tension and Their Diagnostic and Prognostic Import. G. E. de Schweinitz, Philadelphia.
96 Silver Preparations in Conjunctival Disease. M. Standish, Boston.

Texas Medical News, Austin.

August.

97 Importance of the Recognition and Treatment of Adenoids. D. T. Atkinson, Hillsboro.
98 Prenatal Influence and Postnatal Suggestions. C. E. Belcher, Munson Station, Pa.

Vermont Medical Monthly, Burlington.

August 15.

99 Medical Curriculum. H. C. Tinkham, Burlington.
100 Diagnosis of Chronic Interstitial Nephritis. S. W. Hammond, Rutland.
101 Recent Phases in Connection with the Vermont Observation Law for Insane Criminals. W. D. Berry, Burlington.
102 Preventive Medicine. H. L. Manchester, Pawlet.
103 Broncho-Pneumonia in Children. L. A. Newcomb, Montpelier.

Fort Wayne Medical Journal-Magazine.

August.

104 Forceps. L. P. Drayer, Ft. Wayne.
105 Food Values and Their Practical Application. A. P. Buchman, Ft. Wayne.

The Medical Fortnightly, St. Louis.

August 25.

106 Case of Camphor Poisoning. O. M. Rhodes, Bloomington, Ill.
107 Huacos (Mummy-grave) Potteries of Old Peru (A Study in Pre-Columbian Pathology). A. S. Ashmead, New York.
108 Female Prostate—Anatomico-Surgical. C. E. Barnett, Ft. Wayne.

Pennsylvania Medical Journal, Athens.

August.

109 Philadelphia County Medical Society—Its Problems of the Future. J. M. Anders, Philadelphia.
110 *Focal Diagnosis of Operable Tumors of Cerebrum. C. K. Mills, Philadelphia.
111 *Remarks on the Surgical Aspects of Operable Tumors of the Cerebrum. C. H. Frazier, Philadelphia.
112 *An Instrument Affording a Quick and Safe Method of Entering the Skull with the Minimum Destruction of Bone and Always Preserving a Vital Bone Flap. H. C. Masland, Philadelphia.
113 *Avulsion of the Terminal Branches of the Trigeminal Nerve for the Cure of Trifacial Neuralgia. E. LaPlace, Philadelphia.
114 *Conservative Treatment of the Enlarged Prostate. H. M. Christian, Philadelphia.
115 Case of Cesarean Section. J. H. Devor, Ft. Loudon, D. F. Unger and G. M. Brubaker, Mercersburg.

110, 111, 113.—See THE JOURNAL, Oct. 4, 1905, page 1188.

112.—See THE JOURNAL, March 4, 1905, page 713.

114.—See THE JOURNAL, Oct. 28, 1905, page 1351.

Illinois Medical Journal, Springfield.

August.

116 Some of the Problems of the Internist which Concern the Surgeon. J. F. Percy, Galesburg.
117 *Significance of Hydrochloric Acid Variation in the Stomach Contents. E. J. Brown, Decatur.
118 Flatfoot and Symptomatic Arches. F. B. Lucas, Peoria.
119 Rights and Duties of Municipalities in Regard to Infectious Diseases. G. W. Webster, Chicago.
120 Obstetric Asepsis and Antisepsis. J. B. De Lee, Chicago.
121 Action of Antiseptics on the Parasite. A. Gehrmann, Chicago.
122 Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur-Filtered Water, Steam and Formaldehyd Sterilizers, and Formaldehyd Disinfection of Rooms. A. Goldspohn, Chicago.
123 *Attitude of the Physician Toward the Nostrum Evil. C. S. Williamson, Chicago.

117, 123.—See THE JOURNAL, June 9, 1906, page 1787.

Annals of Gynecology and Pediatry, Boston, Mass.

August.

124 Medical Inspection and Examination of School Children in New York. S. J. Baker, New York.

Southern Medicine and Surgery, Chattanooga, Tenn.

August.

125 Arteriosclerosis; Its Relation to Disease of the Nervous System and to Disorder of Function. (To be continued.) J. Collins New York.
126 Technic of Abdominal Closures. E. Malone, Memphis, Tenn.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 25.

1 *Circulation Viewed from the Periphery. J. Barr.
2 *Technic of Operations on the Central Nervous System. V. Horsley.
3 *Teaching of Obstetrics. W. S. A. Griffith.

1, 2, 3.—See abstracts in THE JOURNAL, Sept. 1, 1906, p. 706.

The Lancet, London.

August 25.

4 *Observations on the Effect of Sterile Caseous Matter in the Treatment of Tuberculous Disease. P. Paterson.
5 *Anti-cholera Serum. A. McFadyen.
6 Hematogenous Albuminuria. R. H. Fox.
7 Two Cases of Multiple Infection. G. C. Chatterjee.
8 Correction of Death-rates. T. F. Pearse.
9 Induction of Hypnosis. E. Ash.

4. Sterile Caseous Matter in Treatment of Tuberculosis.—Paterson directs attention to a few observations which he has made on the effect produced on tuberculous lesions by the injection of some of the products of the tubercle bacillus as elaborated in the body. He says that it is well known that tubercle bacilli are found in the walls of tuberculous abscesses, but in the contents they may be so few that inoculation experiments may be necessary to demonstrate their presence. The conditions in the interior of such abscesses are apparently

favorable to growth; the serum and soluble toxins pass into the circulation, producing more or less constitutional disturbance, whilst there is a stream of fresh serum, rich in nutritive substances, into the interior; the temperature is most suitable, and still not only do the bacilli not increase, but actually diminish in numbers. There must, then, be some substance in the contents which is inimical to the bacilli and, as the fluids are being constantly renewed, presumably this deleterious material is in the encapsulated solids.

The conditions which exist in an abscess, as regards the relative proportion of caseous matter, can not be produced in the body as a whole, still the possibility remains that the introduction of small quantities might exert a beneficial influence on the disease. But before such injections can be made it is necessary to destroy the living bacilli present, for though these may be so few as to escape notice with the microscope, inoculations show that even in these cases they are present. As it was requisite that the chemical constitution of the solids should be as little charged as possible it was evident that neither heat nor chemicals could be used for the purpose of sterilization, and extreme cold, even though applied continuously for a long time, does not affect the virulence of organisms. Cold applied intermittently was found to produce the desired result. If tuberculous pus be kept in a refrigerator for five or six months, but allowing it to thaw frequently during that time, the pus will not induce tuberculosis when injected into guinea-pigs, even in large doses. Having destroyed the bacilli by this means the serum is poured off and the sediment is then washed for three days in a continuous stream of cold sterilized water to remove all soluble toxins. Sterile normal salt solution is now added to the fine white sediment till each centimeter of the emulsion contains 5 milligrams of solid substance and the material is then ready for use.

Large numbers of animals have been injected with this suspension by Paterson, and in no instance has tuberculosis been produced. If a large quantity be injected into a tuberculous patient there is a well-marked reaction, but a few minims can be given without any evident disturbance. If the opsonic index is to be regarded as the degree of resistance of the body against any particular organism then we have in this substance a means of raising the tuberculous index to a high level and that without any negative phase. In one of Paterson's patients this index rose from 0.5 to normal limits within twelve hours. Such a rapid rise is unusual, but there is no difficulty in raising the index to what is regarded as normal and in maintaining it at that level. The technic necessary to obtain this index is so elaborate that it can only be conducted in a fully equipped laboratory and by a properly trained observer, and so long as it remains in this position it can only be employed in a limited number of cases. In using caseous matter, Paterson has found the temperature a convenient guide to the dose. If sufficient be introduced to raise the temperature from 0.5 degree to 1 degree, the best results are obtained and at the same time the index keeps within normal limits. If there be no rise of temperature the index may still be high and yet little, if any, improvement be observed in the disease. He has found that from 0.1 to 0.5 cubic centimeter of emulsion given every second day is sufficient to raise both index and temperature. Paterson begins with the smaller quantity and increases the amount at each injection till a slight reaction appears.

5. **Anticholera Serum.**—MacFayden conducted experiments which show: 1. That acutely toxic cell juices possessing active immunizing properties can be obtained from the cholera organism by the method employed. 2. That an antibody can be produced for that primary poison which exists as an integral constituent of the cholera bacillus—a matter on which there has been considerable dispute and difference of opinion. 3. That the antiendotoxic power of the serum can be raised to a marked degree—a matter of equal importance. 4. That the serum in addition to its antiendotoxic possessed agglutinative and bacteriolytic properties. 5. That in the case of the cholera organism there exists an intimate relationship between its virulence and toxicity. 6. That the cholera endotoxin obtained under the conditions described is thermolabile, being readily destroyed at 55 and 60 C.

Journal of Tropical Medicine, London.

August 15.

10 Beriberi—A Restatement and Reply to Some Criticisms. H. Wright.
11 Malignant Anthrax Edema in Central America. A. Y. Massey.

The Liverpool Medico-Chirurgical Journal, London.

July.

12 Diminishing Birth-rate. H. R. Jones.
13 Effect of Small Doses of Potassium Iodid. W. Carter.
14 Polycythemia Vera (Vaquez's Osler's Disease); A Description of a New Clinical Entity. With a note of a Method of Estimating the Viscosity of the Blood. J. H. Watson.
15 Irregular Pulse; Its Value in Prognosis. J. Hay.
16 Stokes-Adams Disease. J. Hay.
17 Modern Treatment of Syphilis. D. Smart.
18 Complications of Pneumonia and Their Treatment. N. Raw.
19 Acute Nephritis—Morbus Brightii; With Special Reference to Treatment. A. G. Gullan.
20 Possible Danger in Exploratory Puncture of the Chest. H. Armstrong.
21 Significance of the Opsonic Power of the Blood, and the Value of Estimations of the Opsonic Index in the Diagnosis of Tubercular and Other Infections. T. R. Bradshaw and E. E. Glynn.
22 Opsonic Power of the Blood. G. A. Grace-Calvert.
23 Case of Acute Hemorrhagic Pancreatitis. F. W. B. Young.
24 Some Cases of Chronic Rigidity of the Spine. W. B. Warrington.
25 Further Note on Appendicitis. F. T. Paul.
26 Case of Appendicitis with Complications. K. W. Monsarrat.
27 Three Cases of Intra-Peritoneal Rupture of the Bladder. R. W. Murray.
28 Internal Derangement of the Knee Joint; Differential Diagnosis and Treatment. T. Thomas.
29 Tropical Abscess of the Liver. G. P. Newbolt.
30 Posterior Cerebral Tuberculosis. K. W. Monsarrat.
31 Case in which the Spinal Cord of a Rabbit was Used to Bridge over a Gap in the Musculo-Spiral Nerve. D. D. Crawford.
32 Position of the Operative Treatment of Fibroid Tumors of the Body of the Uterus. T. B. Grimsdale.
33 Puerperal Eclampsia. J. Blair.
34 Preliminary Note on a New Theory of Female Genital Activity. W. B. Bell.
35 Three Interesting Cases of Papillomatous Tumor. F. T. Paul.
36 Examination of the Blood by Means of Cut Sections. R. M. J. Buchanan.
37 Aspects of Pruritus. F. H. Barendt.
38 Scabies: Some Points in Diagnosis, Infection and Treatment. F. H. Barendt.
39 X-Ray Treatment of the Ringworm of the Scalp. S. Taylor and W. C. Oram.
40 Subjective Symptoms in Eye-Diseases. R. J. Hamilton.
41 Influence of X-Rays on the Nitrogenous Metabolism and on the Blood in Myelogenous Leukemia. O. T. Williams.
42 Treatment by Hypnotic Suggestion. A. B. Taplin.

Annales de l'Institut Pasteur, Paris.

Last indexed XLVI, page 1051.

43 (XX, No. 4.) Trypanosomiase des chevaux de l'Annam (bornes). J. Vassal. Id. Comparison avec le surra. A. Laveran and F. Mesnil.
44 *Des endotoxines solubles typhique, pesteuse et dysentérique. Besredka.
45 Sur une spirillose d'un chéiroptère (bat). C. Nicolle and C. Comte.
46 (No. 5.) *Le sérum antidysentérique. L. Vaillard and C. Dopter.
47 *Origine intestinale de la tuberculose pulmonaire et mécanisme de l'infection tuberculeuse. A. Calmette and C. Guérin.
48 Etudes épidémiologiques et prophylactiques du paludisme. IV campagne en Algérie, 1905. (Commenced in No. 4.) E. and É. Sergent.
49 *La lèpre expérimentale chez les singes inférieurs (monkeys). C. Nicolle (Tunis).
50 Bacillus putrificus. Bienstock.
51 (No. 6.) Transmission de la péripneumonie des bovidés aux espèces ovine et caprine (pleuropneumonia in sheep and goats). E. Dujardin-Beaumetz.
52 Sur les relations des sensibilisatrices avec l'alexine. J. Bordet and F. P. Gay.
53 De l'action du streptocoque et de sa lysine introduits par voie buccale et de quelques questions qui s'y rattachent. A. Tchitchkine.
54 (No. 7.) *Traitement des trypanosomiases par les couleurs de benzidine. (Commenced in No. 6.) F. Mesnil and M. Nicolle.
55 Injection des couleurs de benzidine aux animaux normaux. G. Bouffard.
56 To Gather and Preserve Flies, Mosquitoes, etc.—Récolte et conservation des diptères. E. L. Bouvier.
57 Culture du trypanosome de la grenouille (of the frog). G. Bouet.
58 Recherches sur la toxine et l'antitoxine cholériques. Brau and Denier.
59 Nouvelles recherches sur la spirillose des poules (of fowls). Levaditi and Manouelian.
60 *Un sérum toxique pour les nerfs périphériques. A. Schmidt (Moscow).

44. **Soluble Endotoxins.**—Besredka states that an endotoxin can be obtained from bacilli by triturating a dry mixture of the bacilli and sea salt and then adding water. These endotoxins are more strongly toxic than any other toxin yet described, but they can be neutralized by corresponding serums

obtained by intravenous injection of living microbes. The temperature at which they are destroyed by heat is invariable and characteristic, like the boiling or melting point for chemical substances.

46. **Great Efficacy of Antidysentery Serum.**—Vaillard and Dopter state that the serum of horses immunized against the bacillus of dysentery possesses antimicrobian and antitoxic properties which render it useful in therapeutics. This serum is entirely harmless for man, but is proving to be almost specific in the treatment of bacillary dysentery. It has no effect on any other variety. They claim that it arrests both the infection and the intoxication and insures rapid recovery, putting an end at once to all the intestinal disturbances. Its effects are more striking the earlier it is used, although it has proved effectual even as late as the sixteenth day. Prolonged and chronic dysentery is also amenable to this serum treatment. These results were practically constant in 96 cases of severe dysentery treated with the serum alone, the number of stools ranging from 15 to 288 a day. The amount injected ranged from 20 to 100 c.c., and the injection was sometimes repeated after twenty-four hours, and again a third time in the most threatening cases. The Shiga-Kruse bacillus had been used to immunize the horses, but the serum proved equally effectual against this and against the Flexner bacillus. The curative action of the serum is so prompt and certain that its prophylactic use seems hardly necessary.

47. **Frequency of Tuberculous Infection by Way of Digestive Tract.**—Calmette and Guérin supplement their previous publications on experimental tuberculosis with the present article, which relates research with cows. The results show that adult cows, as well as calves, contract tuberculosis by the intestinal route, without any traces to be found in the walls of the intestinal tract revealing the passage of the tubercle bacilli through them. In younger animals the bacilli are retained more or less completely in the mesenteric glands. They may die off in the glands or may entail the formation of tubercles. In adult animals the defensive reaction on the part of the glands is much less pronounced, and the bacilli are generally swept along, with the leucocytes which have incorporated them, into the lymph circulation and through the pulmonary artery to the lung. Pulmonary tuberculosis in the adult, supposedly primary, is more often of intestinal origin. In experimental work, infection by way of the digestive tract is the most effectual and the one that conforms best to the normal conditions of natural infection.

49. **Transmission of Leprosy to Monkeys.**—Monkeys of a low type have been found by Nicolle to be susceptible to leprosy in about the same degree as they are susceptible to syphilis. The findings with anthropoid apes may prove more instructive.

54. **Treatment of Trypanosomiasis by the Benzidin Dyes.**—Nicolle and Mesnil have been experimenting with other dyes of the benzidin group to which trypan red belongs, and give the details of their research, both in regard to the chemical and the biologic action of the dyes in trypanosomiasis. They found that the dye known as "dichlorobenzidine-acid H" (Bayer) is the most powerful in its curative action and is effectual in the three forms of trypanosomiasis in animals, in nagana, mal de caderas and surra. It has, besides, a very striking preventive action in respect to surra. Their tests were made mostly on mice.

60. **Prepared Serum Toxic for the Peripheral Nerves.**—Schmidt made an emulsion of sciatic nerves from hogs and injected it into the peritoneum in guinea-pigs. The serum of the guinea-pigs acquired in time a destructive property for the peripheral nerves of frogs. The nerves suffered both in their physiologic functions and in their structure.

Annales d. Mal. d. Org. Gén.-Urin., Paris.

Last indexed, XLVI, page 832.

61 (XXIV, No. 6.) Cystoscope combiné pour irrigation, évacuation et cathétérisme de l'un ou des deux uretères. A. V. Freudenberg.

62 Synorchidie artificielle après section du cordon pour grosses hernies ou ectopies très élevées. Mauclaire.

63 Prostatectomie totale par la voie sus-publienne. A. Papadopoulos.

64 (No. 7.) Salt Starvation.—Les régimes déchlorurés. (Mal de Bright, chlorurémie et azotémie). F. Widal.

65 De la mesure de la capacité du bassinet (of small pelvis). G. Luys.

66 Anatomie pathologique des cancers épithéliaux de la prostate. Motz and Majewski.

67 Procédé opératoire de l'amputation partielle du pénis, à lambeaux latéraux égaux caverno-cutanés. Kallionzis (Athens).

68 (No. 8.) Décapsulation rénale et néphrectomie dans le traitement des formes graves de l'éclampsie. Pousson and Chambrelent (Bordeaux). See THE JOURNAL, page 308, and also in vol. xlvi, page 1567.

69 Traitement de l'épididymite blennorrhagique par l'epididymotomie. Bazet (San Francisco). See THE JOURNAL for April 28, 1906, page 1319.

70 Traitement chirurgical des néphrites chroniques. Address at Lisbon International Medical Congress. A. Pousson.

71 (No. 9.) *Traitement de la blennorrhagie chronique par les instillations de nitrate d'argent suivies de l'introduction d'un cathéter en zinc. F. Balzer and A. Tansard.

72 Sur la lithiase rénale. P. Héresco.

73 Le massage vibratoire de la prostate. Nicolich.

74 (No. 10.) Masturbation symptomatique (épilepsie larvée). C. Féré.

75 Nouvelle canule urétrale à triple courant. F. Zacco (Turin).

76 Funiculite lympho-toxique des pays chauds (tropical). R. Ménocal (Havana).

77 Injections of Sea Water in a Case of Nephritis.—L'eau de mer en injections isotoniques sous-cutanées dans un cas d'œdème brightique. Robert-Simon.

78 (No. 11.) *Etude des ruptures traumatiques de la vessie (of bladder). L. Morel.

79 Les méfaits des artifices de la fécondation (mishaps with artificial aids to fecundation). C. Féré.

80 Du rôle de la ponction lombaire dans le traitement de l'urémie nerveuse. G. Carrière (Lille).

71. **Silver Nitrate and Zinc in Chronic Gonorrhea.**—Balzer and Tansard report 13 cases treated with nitrate of silver and zinc, the action of the zinc decomposing the silver nitrate. There is thus a production of silver albuminate and of silver chlorid which are deposited on the mucosa lining the urethra. There is, further, a formation of metallic silver, also of traces of zinc chlorid, and, finally, of zinc nitrate, which is the most effectual factor of all in the treatment. To obtain this combined local action they instil 10 to 20 drops of a 1 per cent. solution of nitrate of silver. Immediately afterward they insert a catheter made of metallic zinc, about 32 or 40 in the Bénique series. The zinc catheter is held in the urethra for a minute or two, until the chemical reaction becomes evident by the pain experienced and by the black discoloration of the vaselin with which the catheter is lubricated. In two minutes this black stain shows that the silver-zinc reaction has occurred, and the catheter is then withdrawn. The catheter should be boiled beforehand in distilled water and cleaned at once after removal. They rub it with potassium iodid until it has resumed its usual color. It loses its polish soon and has to be sent to be repolished occasionally. The efficacy of this combined treatment is established by the cases reported. They affirm seven applications cured the first patient, 9 the second and third, 5 the fourth, and so on, all cases of rebellious chronic gonorrhea in males. The method is probably equally applicable for girls and women, in vaginitis and metritis.

78. **Traumatic Ruptures of the Bladder.**—Morel reports 3 cases which show the diagnostic importance of finding always the same quantity of urine in the ruptured bladder, as all the urine above the point of rupture flows out into the peritoneal cavity. The almost immediate refilling of the bladder is also important. The urine accumulated outside flows back into the bladder as soon as it is emptied. One patient had general paralysis, and this allowed his bladder to become distended to the bursting point. The degeneration of the bladder musculature also favored abnormal distension.

Archiv f. Gynäkologie, Berlin.

Last indexed page 76.

81 (LXXIX, No. 1.) *Die Sectio cæsarea an der Klinik Schauta. J. Neumann.

82 Ueber Melanosarcoma ovarii. Gleichzeitig ein Beitrag zur Physiologie des Pigments. H. Bab.

83 *Studien zum klinischen und pathologisch-anatomischen Verhalten der Lymph-Drüsen bei malignen Erkrankungen, hauptsächlich dem Carcinoma colli uteri (behavior of lymph glands with cancer). F. Fromme.

84 (No. 2.) *Ueber die primären Resultate und die Dauererfolge der modernen Myom-Operationen (results immediate and remote). O. Sarwey.

85 *Ueber die Tuberculose der Vulva. Logothetopoulos.

86 *Influence of Disinfection of Vagina on Puerperal Morbidity.—Einfluss der Scheidendesinfection auf die Morbidität des Wochenbettes. K. Baisch.

87 Zur Frage der Cysten der Corpora lutea des Ovariums. W. Grousdew.

88 *Zur Gravidität und Hämatometra des atretischen Nebenhorns (closed accessory horn). R. Freund.
89 Fall von Gonokokkämie bei einem Säugling mit Blennorrhoe (in infant). Hocheisen.
90 *Kidney Functioning in Congested Kidney of Albuminuria in Pregnancy and in Eclampsia.—Nierenfunction bei Schwangerschaftsniere und Eklampsie. O. Büttner.
91 *Die Nucleo-Proteide in der Behandlung septischer Krankheitsformen. E. Pollak (Vienna).

81. **Schauta's Experience with Cesarean Section.**—Neumann discusses from various points of view the 175 Cesarean sections performed in Schauta's clinic, with five others done immediately after death. He remarks that this is the largest series of operations yet published from one clinic. He tabulates the various details, showing that 161 of the women recovered, including 52 febrile cases; in 140 cases there was no reaction on the part of the wound, while there were stitch-hole abscesses in 10 and in the abdominal wall in 8. In 25 cases postoperative bronchitis was observed, with lobular pneumonic foci in 4 and croupous pneumonia in 1. About half of these pulmonary cases occurred during the winter. In one case a latent tuberculous affection of the lungs made itself manifest in the bronchitis after the operation. These respiratory affections occurred about equally with the various anesthetics employed. The importance of these affections is shown by the fact that these cases were all accompanied by fever except in 5 out of the 45. Coughing also has an unfavorable influence on the healing of the wound, being probably responsible for 9 out of the 18 cases in which the wound did not heal by primary intention. In the 14 fatal cases the wound had healed by primary intention in several, and death was due to eclampsia in 3 and to other causes in the 6 for which the operation was in no way responsible. In 8 cases the operation may possibly be incriminated, one death being due to asphyxia under chloroform, one on the fifth day to pneumonia. The anesthetic in this last case had been Schleich's mixture. Death in another case was the result of axial torsion of the intestine from adhesions consecutive to the Cesarean section. In another case it was the result of hemorrhage from the stump after a Porro operation. Hemorrhage from the stump in a second case was due to pre-existing infection. In the three other cases death was due to infection of the wound, and they emphasize anew the extreme caution necessary in selecting cases for Cesarean section, also the necessity for avoiding internal examination of women for whom Cesarean section is contemplated, and, last but not least, absolutely certain asepsis on the part of the operating surgeon. Of the 175 children, 164 were living twenty-four hours after the intervention, 7 were born dead and 3 died in asphyxia. In 18 cases Cesarean section had been done before, in 13 instances at the same clinic. Adhesions were found in all these cases, so large and strong in 2 cases that it was hard to open up the peritoneal cavity. The adhesions were at about the same points as in Haven and Young's material. They show that the ultimate outcome even with modern technic is still far from perfect. The best results were obtained with a sagittal incision, made as high as possible.

83. **Lymph Glands in Carcinoma of the Cervix.**—Fromme is assistant physician in charge of the gynecologic clinic at Halle, and here discusses certain questions connected with cancer of the cervix, among them the cause of the sudden febrile attacks with chills sometimes observed in the course of cancer. He reviews the literature on the subject of the behavior of the lymph glands, and then describes in detail 31 cases from his own experience presenting atypical features. Among other points learned is that the occasional appearance of fever with carcinoma of the cervix must be the result of infection of some of the lymph glands with very virulent micro-organisms, which overcome the resistance offered by the glands and pass on into the blood. When the glands are already affected, even slightly virulent micro-organisms are able to overcome their resistance. The micro-organisms come from the cancer, or enter through some mechanical or chemical injury of its surface. In consequence of the bacterial invasion of the glands a growth of granulation tissue and of connective tissue is stimulated. This may be the work of the cancer toxins alone or associated with living bacteria, or it may follow invasion of the gland by the cancer. This new formation of connective tissue aids in the defense as, if the gland is not already cancerous, it opposes greater resistance to invasion by the cancer later, and if the gland is already cancerous, the malignant growth may become encapsulated by connective tissue and be choked out. The gland then seems to be full of a white, greasy mass.

84. **Results of Operative Treatment of Myoma.**—Sarwey analyzes the results of 430 operations for myoma at Döderlein's clinic at Tübingen. Comparing them with others' statistics he finds the total mortality of myoma operations to be 4 or 5 per cent.; those done by the vaginal route show 1 or 2 per cent. higher mortality and the conservative operations 1 per cent. higher mortality than the radical operations. He comments on the great frequency of complications of myoma and declares that they are a strong argument for operative treatment. The ultimate outcome, he says, in cases treated by removal of both ovaries in connection with the radical operation are the best conceivable. Disturbances connected with the artificial menopause were noticed in only a third of the patients, and were always so slight and transient as not to interfere with the working capacity. Danger of trouble in the ovaries later is thus summarily done away with. Conservative operations have several drawbacks, among them the possibility of recurrence and of rupture of the uterus at the point of enucleation. Youthfulness and the express wish of the patient to retain menstruation and the possibility of conception are the only indications, he thinks, for conservative procedures. He advocates not to waste time on symptomatic treatment if it does not soon prove effectual, but to operate promptly after fully instructing the patient in the matter.

85. **Tuberculosis of the Vulva.**—The lesion was removed in the case described on the assumption that it was a cancer, but it proved to be a patch of ulcerated miliary tuberculosis, apparently primary. The patient was a woman of 75, and she succumbed five days afterward to general weakness. An old tuberculous focus was found in the right apex and the glands of the hilus were calcified. The findings in this case throw doubt on some of the published cases of supposed primary genital tuberculosis.

86. **Influence of Disinfection of Vagina on Puerperal Morbidity.**—Baisch remarks that the use of rubber gloves and bacteriologic examination have placed the study of this question on a surer foundation. His article is based on 1,000 spontaneous births in which the parturient was usually repeatedly examined, as many as thirty times in one case. In half of the patients the vagina was washed out with a solution of sublimate. The febrile cases among the irrigated numbered 64, that is, 12.8 per cent., while the unirrigated had only 40 febrile cases, that is, only 8 per cent. Comparing only those in which an internal examination was made, 12.8 per cent. of 500 irrigated and 7.7 per cent. of 373 unirrigated, proved to be febrile cases. Excluding the extragenital sources for the fever, the percentages were respectively 10 for the irrigated and 5.2 per cent. for the unirrigated. Bacteriologic examination before and after showed that the rinsing with a solution of corrosive sublimate was not able to destroy the various germs, especially streptococci and gonococci. It modified the bacteriologic content to the extent that the harmless bacilli were destroyed or overwhelmed by the streptococci which then proliferated unchecked. Streptococcus endometritis was observed in 5 cases among the unirrigated and in 14 cases among the irrigated. The sublimate disinfection has now been abandoned. At present every second parturient is treated by the Zweifel method of wiping out all the blood from the vagina a few hours after birth. The findings to date indicate that autoinfection is not responsible for puerperal fever. The latter seems to be always due to the penetration of pathogenic germs into the uterus. The experience at the clinic has been that 7.6 per cent. of all spontaneous deliveries are followed by fever. The aim should be to prevent access of pathogenic germs to the uterus. The access of germs is favored by anything—such as sublimate irrigation—which reduces the physiologic protecting powers of the vagina. Döderlein's success with lactic acid indicates, however, that the prospect of destroying the pathogenic germs in the vagina is not absolutely hopeless.

88. **Fetation in a Closed Accessory Horn of the Uterus.**—Two cases are described and illustrated and the literature reviewed. Among the points brought out is the fact that de-

fectively developed genital organs are peculiarly liable to infection, especially from the intestines; also that if there is any mucosa at all, menstruation is liable to occur, and in a closed organ the menstrual blood may be absorbed.

90. **Kidney Functioning in Congested Kidney of Pregnancy and in Eclampsia.**—Büttner states that the urine in the congested kidney of pregnancy, during normal delivery and during the convulsions of eclampsia, exhibits the characteristics of insufficiency on the part of the kidneys, evidently due to defective blood supply. This in turn, he is convinced, is the result of spasmodic contraction of the blood vessels in the kidney. The convulsions in eclampsia are probably due to spasmodic contraction of the arteries in the brain, but the assumed toxin causing this vasoconstriction is still mere conjecture.

91. **Nucleo-Proteids in Septic Affections.**—Pollak discusses the various theories in regard to the mechanism of immunization, immunity and serum treatment, and then describes 2 cases in which he injected nuclein and salt on theoretical premises in regard to the action of the nucleo-proteids in septic affections. He injected the mixture subcutaneously so as to take advantage of its leucotactic properties to the fullest extent. The prompt benefit that followed encourages him in advocating general adoption of this means of treatment built up on the broadest principles, aiming to increase by artificial aid the resisting powers of the organism in its struggle with streptococci by supplying to the organism some preparation of nuclein. The beneficial effect may not be due to the nucleic acid alone; the albuminoids of the nucleo-proteids certainly participate in it.

Berliner klinische Wochenschrift.

92 (XLIII, No. 23.) Zur Pathologie der Akroparästhesie. A. Pick.
93 *Zur Frage der Leukotoxin-Bildung durch Röntgen-Bestrahlung. R. Milchner and W. Wolff.
94 *Superheated Air plus Calomel and Iodin for Tuberculosis of Mucous Membranes.—Zur Behandlung der Schleimhauttuberkulose. E. Holländer.
95 Zur nasalen Behandlung der Epiphora. A. Meyer.
96 Experimenteller Beitrag zum Mechanismus der Magensekretion nach Probefrühstuck (gastric secretion after test breakfast). (Concluded.) L. Kast.
97 To Measure Temperature of Skin.—Beitrag zur Messung der Hauttemperatur. E. Weisz.
98 *Dietetic Regulations at the Homburg Spa.—Die Homburger Diäten. C. Pariser (Homburg).
99 (No. 24.) Ueber Spirochæta pallida bei congenitaler Syphilis. H. Beitzke.
100 Relations between Human and Bovine Tuberculosis.—Die Beziehungen der menschlichen Tuberkulose zu der Perlsucht des Rindes. L. Rabinowitsch.
101 *Thyroid Treatment of Obesity.—Zur Fettsuchtbehandlung mit Schilddrüse. M. Rheinboldt.
102 Untersuchungen ueber primäre Tuberkulose im Verdauungskanal (digestive tract). Summarized on page 813. J. Ipsen.
103 Spirochæta pallida (Schaudinn) und Organerkrankung bei Syphilis congenita. P. Huebschmann.
104 Study of Mouse Tumors.—Ueber Sarkomentwicklung bei einem drüsenartigen Mäusetumor. L. Loeb.
105 Die Radioactivität der Mineral-Quellen (springs). (Concluded.) H. Sieveking.

93. **Formation of Leucotoxin Under Roentgen Treatment.**—Milchner and Wolff exposed an extirpated but surviving spleen to the action of the Roentgen rays. Severe pathologic changes became evident after a few hours, while another spleen under the same conditions but not exposed to the rays showed normal structure. The extract of the exposed spleen, injected into animals, rapidly reduced the numbers of leucocytes. Injection of the unexposed spleen was followed by marked leucocytosis. Their research also confirmed in other ways the generation of a leucotoxin under Roentgen action.

94. **Superheated Air Plus Calomel and Iodin in Treatment of Tuberculosis of Mucosæ.**—Holländer reiterates that ascending tuberculous processes of the mucosa of mouth and nose occur much more frequently than is generally recognized, both in connection with lupus and without it. In contrast to the descending form, in which the condition of the diseased lung dominates the clinical picture, the prognosis is not unfavorable. The ascending variety displays a pronounced tendency to heal after removal of the primary focus, and complications in the lungs run a mild course. Treatment with superheated air without direct contact is capable of realizing a complete cure. In his extensive experience during the last ten years not a single case has shown itself refractory to this treatment. His success with quinin plus iodin in erythematous lupus encouraged him to try iodin in these tuberculous processes, with calomel for the local chemotactic agent. Fifteen minutes before applying the calomel he administered a tablespoonful of a 5 per cent. solution of potassium iodid. The calomel was applied as a dry powder to the lesion on cotton and left for twenty-four hours, or it was rubbed into the mucosa of the gum or a 1 or 2 per cent. oily suspension was injected directly into the tissue. The latter method induced necrosis of the tissues, but after the necrotic tissues were absorbed or thrown off the process was found remarkably influenced for good. In laryngeal tuberculosis he advises insufflation of the calomel. The most striking results obtained by this treatment were in the case of a girl with extensive lupus of the lip and upper gum. The entire upper lip had fallen in from the ulcerative process and she was unable to eat solid food. The calomel tampons were applied and the iodin given twice a day, and in the course of five weeks the entire process had healed. He has found it extremely beneficial in tuberculous processes in the bladder. He has treated over 100 patients with tuberculosis of the nasal mucosa, 30 with tuberculous and lupous processes in the mouth and gums, about a dozen patients with tuberculosis of the lips, including 2 with isolated primary tuberculosis, and a patient with extensive tuberculous processes on the tongue. In 3 cases he applied the superheated air to the larynx after laryngotomy. In 2 cases the process was of the descending type and the results of treatment were not satisfactory; in the other it was ascending and the patient was cured. In conclusion he urges more general adoption of this iodin-calomel treatment in tuberculous affections of the bladder mucosa as well as in those of the larynx and mouth.

98. **Dietetic Regulations at Health Resorts.**—Pariser describes the way in which the physicians of Homburg have satisfactorily solved the problem of providing a suitable diet for the various classes of patients taking treatment at the spa, without attracting attention to the patient or inconveniencing the hotel or boarding-house management. The affections most common among the patients are chronic gastric or intestinal catarrh, with diarrhea, chronic constipation, diabetes, heart affections, gout, nephritis and neurasthenia. Four special diets with a few subclasses have been found to answer the purpose, diet 1 for gastric affections, 2 for intestinal catarrh with diarrhea, 3 for constipation and 4 for diabetes. The local medical society supplies the landlords with the booklets containing the list of 220 different articles or dishes. The landlord marks the price opposite the dishes he intends to serve on that special day, or makes up the table d'hôte from the list. He is supplied with a fresh lot of the booklet menus for each day. Opposite the name of each dish are the figures 1, 2, 3 and 4 in parallel columns or the space for one of the figures is left blank. The absence of the figure shows that the dish is forbidden in the diet represented by the figure. The booklet contains also a brief presentation of the principles that guide the selection of the diet, with also general and special remarks. These booklets are supplied at cost price, and have been gratefully accepted by the landlords, while from the medical and scientific standpoint they are regarded by all who have seen their workings as a great advance. The daily booklet menus are supplemented by a large wall table that hangs in each kitchen and bears in large type the four "diets" and subdivisions. The forbidden dishes are printed in red ink, the others in black. The table contains also a few of the "guiding principles" in a brief summary. The system has been in use now for a year or so, with, it is said, constantly increasing satisfaction on the part of all concerned and great benefit to the patients. Each patient is given a separate booklet containing only the diet prescribed for his individual case when he enters on the "cure."

101. **Thyroid Treatment of Obesity.**—Rheinboldt gives the details of 4 cases of obesity in which thyroid treatment was given, supplemented by copious ingestion of albumin, to supply the demands of the over-nutrition consequent on the thyroid treatment. While the thyroid extract is being taken he assumes that about 3,000 calories above the ordinary are required, and if this extra supply is not given from without, the patient's own albumin is drawn on and his general health suffers. In the 4 cases described the treatment proceeded without

the slightest by-effects, which Rheinboldt accepts as confirmation of his theoretical reasoning. He urges that the thyroid treatment should be begun very gradually, and the dose always be restricted to the effectual minimum. The tablets must be thoroughly chewed. At least 20 per cent. of the calories needed should be supplied in albumin, preferably meat. In his experience the elimination of water was much promoted by the thyroid treatment.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

106 (XXXII, No. 30.) Grundsätze der Behandlung der Appendicitis. E. Sonnenburg.
107 *Relations between Physical Behavior and Action of Drugs.—Die Beziehungen zwischen dem physikalischen Verhalten und der Wirkung der Arzneistoffe. E. Frey.
108 Study of Living Spirochetes.—Ueber Beobachtungen an der lebenden Spirochæta pallida. A. Beer.
109 *Bemerkungen zur Desmoid-Reaktion. H. Sahli.
110 *Experimentelle Untersuchungen ueber fermentative Fettspaltung im Magen (splitting of fat in stomach). F. Heinsheimer.
111 Ueber Garrulitas vulvæ. W. Schulein.
112 (No. 31, *Greifswald Festschrift.*) Historical Sketch of Greifswald Medical School.—Geschichtlicher Ueberblick ueber die medizinische Fakultät. P. Grawitz.
113 *Ein Beitrag zur Vererbungslehre (heredity). K. Peter.
114 *Zur Methodik der Untersuchungen der Fettresorption im Darm (absorption of fat in intestine). M. Bleibtreu.
115 Ueber teratoide Geschwülste im Becken-Bindegewebe (tumors in pelvic connective tissue). P. Grawitz.
116 *Ueber senile Atrophie der Augenmuskeln (ocular muscles). Thiele and P. Grawitz.
117 Testing of Drugs on Healthy Persons.—Die Arzneiprüfung am gesunden Menschen. H. Schulz.
118 *Changes in Germs by Cultivating them in Certain Species of Animals.—Ueber die Veränderung der Pathogenität und Virulenz pathogener Organismen durch künstliche Fortzüchtung in bestimmten Tierspezies und ueber die Verwendung solcher Organismen zu Schutzimpfungszwecken. F. Loeffler.
119 *Zur Gramschen Färbungsmethode (staining technic). F. Loeffler.
120 *Komplementablenkung und Blut-Eiweiss Differenzierung (biologic blood tests). Uhlenhuth.
121 *Record of Heart Movement at left Auricle.—Die Registrierung der Herzbewegungen am linken Vorhof. O. Minkowski.
122 *Influencing of Absorption by Diuretics after removal of Kidney.—Ueber die Beeinflussung der Resorption durch Diuretika nach der Nierenextirpation. S. Weber.
123 *Ueber die Beziehungen der Bence-Jonesschen Albumosurie zum Eiweisstoffwechsel (and albumin metabolism). E. Allard and S. Weber.
124 *Ueber Asthma bronchiale. P. Strubing.
125 *Ueber die Häufigkeit und operative Prognose der Bauch-Aktinomykose des Menschen (of human abdomen). F. L. Friedrich.
126 *Suction Hyperemia for Differentiation of Cancer.—Die Verwertung der Saugapparate zur Diagnose bei bösartigen Geschwülsten. C. Ritter.
127 *Zur Frage des Cardiaverschlusses der Speiseröhre (closure of esophagus). F. Sauerbruch and R. Haecker.
128 *Zur Chorea gravidarum. A. Martin.
129 *Zur Colpohysterotomia anterior. Ch. Jung.
130 *Prognose und Therapie der perforierenden infizierten Augapfelverletzungen (injuries of eyeball). O. Schirmer.
131 Zur Kenntnis des Streptococcus mucosus als Erreger der akuten Otitis media. Wittmaack.
132 Intelligenz-Prüfung von Rekruten und älteren Mannschaften. E. Schultze and C. Ruhs.
133 Ein Beitrag zur Diagnostik der Pulpakrankheiten. Schröder.

107. Relations Between Physical Behavior and Action of Drugs.—Frey shows how the physical properties, the solubility in water or oil, the dissociation into ions, and the diffusibility are important for the medicinal effects of drugs. Sufficient has already been learned to explain many of the effects observed, as he illustrates by specific examples.

109. The Desmoid Reaction.—Sahli warns against the desmoid capsules on the market, having always insisted that the physician must make the little desmoid bag for himself at the time of using, for reasons which he states. Physicians who have not had successful results with the desmoid test have, many of them, confessed that they knew of Sahli's work only by brief summaries in other journals, and he says that it is not fair to any method to decry it from tests made in ignorance of the author's minute technic.

110. Splitting of Fat in the Stomach by Action of a Ferment.—Heinsheimer's tests were made on animals and on a young woman with an artificial esophagus who submitted to various series of experiments, the first instance of the kind in an adult. The gastric juice was collected as it flowed naturally, free from admixture of intestinal or pancreatic secretions. The fundus secreted a specific ferment which contained a fat-splitting ferment. This ferment seems to be exceptionally active in infants.

113. Inheritance of Maternal Characteristics by Larvæ.—Peter's experiments were with the larvæ of the echinus or sea urchin, and they showed a marked transmission of maternal characteristics without admixture of the paternal. The findings suggest that the laws of heredity are more complicated than hitherto assumed and that different organisms are regulated by different laws.

114. Research on Absorption of Fat in Intestines.—Bleibtreu describes the technic with which he was able to study the absorption of fat in the isolated, ligated intestine. Cats were the animals used and the substance injected was a soap in the nascent phase. An emulsion of cod-liver oil or olive oil was emulsified by shaking it in water with a little dilute soda solution. To this was added a little dried, pulverized cat pancreas tissue and some bile or solution of salts from ox bile. The needed alkaline carbonate was supplied by the mucosa of the intestine. This mixture was injected into the isolated intestine and the abdomen closed. When examined six or eight hours later, the chyle vessels were found as surcharged with fat as after a copious meal of milk. A control loop without the addition of bile to the mixture showed none of this absorption. He thinks that the technic described will be found useful for further research on intestinal absorption.

116. Senile Atrophy of Ocular Muscles.—Thiele describes a case and suggests that what is generally called amyotrophic atrophy of the ocular muscles is in reality merely senile atrophy.

118. Modification of Virulence of Micro-organisms by Cultivation in Other Species.—Loeffler reports among other findings that the germ of foot-and-mouth disease loses its pathogenic properties for cattle after passage through young pigs. He describes the technic by which germs thus modified by being cultivated in animals of other species can be utilized for protecting immunization.

119. Gram Staining Technic.—Loeffler has been experimenting with various dyes to improve the Gram technic, if possible. He obtained much better results with methyl violet 6 B and methyl violet BN dissolved in a 1 or 2.5 per cent. aqueous solution of carbolic acid, in the proportion of 1 to 10. The first mentioned is most excellent for all the micro-organisms tested except the pneumococcus; for this the second dye is preferable. The carbolic solution must be freshly prepared.

120. The Biologic Blood Tests.—Uhlenhuth has found that dirt, straw, urine, tuberculin and various other substances liable to be encountered with a specimen of blood sent in for examination, "divert the complement"—which is the basis of the hemolytic blood test recently put forth by Neisser and Sachs, mentioned on page 310 of the last volume of THE JOURNAL. This possibility of error deprives the test of accuracy under ordinary conditions, although not detracting from its value in the laboratory where extraneous contamination can be excluded. Comparative research with the two methods, the hemolytic and the precipitating biologic test, gave instructive findings among others in regard to inoculation of monkeys with normal human albumin for serodiagnosis of syphilis for instance.

121. Record of Movements of Heart at Left Auricle.—Minkowski has devised a means to record the movements of the left auricle by a registering apparatus connected with a sound introduced into the esophagus under Roentgen control. He uses an ordinary soft Jacques sound with an opening in the side, over which is drawn a long, narrow rubber bag tied above the opening. By blowing into the sound the little bag is inflated. The sound above is connected with a Jaquet sphygmocardiograph and the heart beat, as felt in the esophagus, is registered on the drum. The bag is inflated until it fits tight in the esophagus, opposite the heart, without pressure. Specimens of curves thus obtained are given.

122. Action of Diuretics After Removal of Kidneys.—Both kidneys were excluded by a ligature in rabbits, and various diuretics then administered or injected. The results demonstrate, Weber thinks, that the diuretics of the caffein group not only affect the endothelium of the kidneys, but also the extrarenal capillaries, and thus they promote metabolism. They act not only on the kidneys, but have also a general capillary action.

123. **Albumosuria and Albumin Metabolism.**—Allard and Weber report the findings in a carefully studied case of albumosuria in a man of 54. The amount of albumose eliminated was out of proportion to the possible sources ingested, especially during febrile states, suggesting that the albumose was derived from destruction of the organic albumin.

124. **Bronchial Asthma.**—Strubing gives a comprehensive analysis of the various theories that have been suggested in regard to the etiology of bronchial asthma. For diagnosis and treatment it is indispensable that the various disturbances should be sharply differentiated and each one traced to its true origin. When the asthma has developed on the basis of a neurosis, other nervous manifestations are liable to be encountered. He has found it possible to train healthy persons until they could imitate the attack of asthma. By the same means he believes it possible to train the asthmatic until they can control the attacks and finally cure them altogether. Treatment based on this principle will be described in a later communication.

125. **Abdominal Actinomycosis.**—Friedrich states that in fully 4 per cent. of the 200 patients operated on at Greifswald for inflammation of the cecum during the last three years, the lesion proved to be actinomycosis. Of the 8 patients treated by extensive resection into sound tissue, 7 are still living in good health. It has been the experience hitherto that the affection is liable to recur during the fifth to the sixth year after two or three years of peace, but the patients in the cured cases seem to be perfectly well.

126. **Suction Therapy for Differentiation of Malignant Tumors.**—Ritter has found suction cups extremely useful for aspirating particles from tumors and fistulas for microscopic examination without danger of hemorrhage or of accelerating the growth of the tumor. In one case described a dubious tumor in the upper abdomen showed fluctuation. A puncture opening was made with a wide cannula and a cupping glass, such as Bier uses for the breast, was applied daily. In a few days the edema had subsided and the tumor could then be palpated. Jelly-like masses were aspirated by the suction, and the patient was much relieved and gained five pounds in weight in seven weeks. The opening was enlarged by a small incision and scraps were obtained for microscopic examination by means of forceps introduced into the tumor through this opening. He has applied this suction therapy in a number of other cases, mostly inoperable cancers. It always brought great relief, while no untoward effects were observed in any instance. In the exceptional cases requiring unusual diagnostic measures the suction cup will be found very useful.

127. **Closure of Esophagus from Stomach.**—Sauerbruch and Haecker report experiences on dogs which suggest that the stomach closes the entrance into the esophagus by a kind of valve caused by the pressure of the fundus on the esophagus. This is sufficient to prevent reflux of stomach content into the esophagus even after the cardia has been completely excised. But if the vagi are severed, the swallowed food does not pass down into the stomach, showing that peristaltic action is necessary to overcome this valve closure of the entrance into the stomach.

128. **Chorea of Pregnancy.**—Martin states that in all his extensive experience with chorea in pregnant women he was never compelled to interrupt the pregnancy except in 3 cases. Medicinal treatment always proved sufficient to conquer the trouble in others. In these 3 cases the menacing chorea rapidly subsided after expulsion of the ovum. Two of his patients exhibited chorea with each recurring pregnancy. In one patient the chorea developed in a pregnancy after an attack of acute articular rheumatism after a normal pregnancy, and reappeared in the succeeding pregnancies with increasing intensity. He advocates bromids, although iron and arsenic may suffice for the milder cases. His formula is sodium bromid and ammonium bromid, each 2 gm., and magnesium bromid 4 gm., in doses of from 2 gm. to 8 gm. a day. He never found it necessary to go above these doses. Complicating endocarditis and meningitis, of course, are indications for more energetic measures. He never observed any untoward effects during the long continued bromid treatment, although 13 days after its discontinuance in one case two attacks of heart weakness were observed. They certainly had some connection with the bromids which had been taken for 81 days.

129. **Anterior Colpohysterotomy.**—Jung says that 3 out of 8 women treated by anterior colpohysterotomy succumbed to previously existing affections which had been the indication for the intervention. He asserts that this operation should be restricted to cases in which there is direct danger for mother or child, or both, and the soft parts are still unprepared for delivery. Such conditions are observed in eclampsia, severe nephritis, uncomplicated heart defects, premature detachment of the normally located placenta, and in acute general affections such as pneumonia. Under other conditions, anterior colpohysterotomy should not be done, enticing as it may appear.

130. **Treatment of Perforating, Infected Wound of the Eyeball.**—Schirmer has had only 2 cases of sympathetic ophthalmia in 157 cases of perforating, infected lesions of the eyeball. He ascribes this fine record to his energetic treatment with mercurial inunctions, saturating the system with mercury, by inunctions of blue ointment, rubbing in every day from 6 to 9 gm. until he has used up from 150 to 200 gm. in the course of nine to twelve weeks. A few instances of mild stomatitis or mercurial exanthem required the suspension of the inunctions for a few days, but otherwise he met with no signs of intolerance. A most important factor in treatment is the bed rest which he enforces until all inflammation has subsided, sometimes for from four to six weeks. Getting up too early is almost invariably followed by recurrence of inflammation. The inunctions are made morning and evening, rubbing in half the daily dose each time. This general mercurial treatment is completed by subconjunctival injection of 0.3 c.c. of a 1 to 2,000 solution of corrosive sublimate. By this energetic general and local mercurial treatment he has saved many eyes when the patients were on the point of having them enucleated. Sympathetic ophthalmia developed in only two instances and in one the systematic mercurial treatment had not been attempted. In the other an operation had been done on the second eye. The impregnation of the entire system with mercury affects the disease germs not only in the eye, but wherever else they may lurk. He was able to save 103, that is, 66 per cent., of the 157 injured, infected eyes that have come under treatment during the last ten years. Ninety, or 57 per cent., were left with more or less vision. Sympathetic ophthalmia was never observed during or within three months of the course of mercurial treatment. The main points are to give enough mercury and to keep it up long enough. Out of 41 cases in which there was still a foreign body in the eye, the results were excellent in 27. The outcome was even better in the cases with retained foreign body than in those without. The iron splinters were always extracted with the magnet. The results in all cases were far better the earlier the treatment was commenced.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

A TEXT-BOOK OF GENITO-URINARY DISEASES, Including Functional Sexual Disorders in Man. By L. Casper, Professor in the University of Berlin. Translated and Edited with Additions by C. W. Bonney, B.L., M.D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Surgeon to the Southern Dispensary, Philadelphia. With 213 Illustrations and 23 full-page plates, some in colors. Cloth. Pp. 618. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

REPORT OF THE ROYAL COMMISSION ON THE DECLINE OF THE BIRTH-RATE AND ON THE MORTALITY OF INFANTS IN NEW SOUTH WALES. Vol. I. Together with Copies of Commissions, Diagrams, Statistical Evidence and Statistical Exhibits, etc., 1904, second session. Paper. Pp. 97. Sydney: William Applegate Gullick, Government Printer, 1904.

A TEXT-BOOK OF SANITARY AND APPLIED CHEMISTRY, or The Chemistry of Water, Air and Food. By E. H. S. Bailey, Ph.D., Professor of Chemistry, University of Kansas. Cloth. Pp. 343. Price, $1.40. New York: The MacMillan Company, 1906.

TRANSACTIONS OF THE MEDICO-CHIRURGICAL SOCIETY OF GLASGOW, edited by H. McLaren, M.B., C.M., Editorial Secretary to the Society. Vol. V. Sessions 1903-1904, 1904-1905. Cloth. Pp. 301. Glasgow: Alex. MacDougall, 1906.